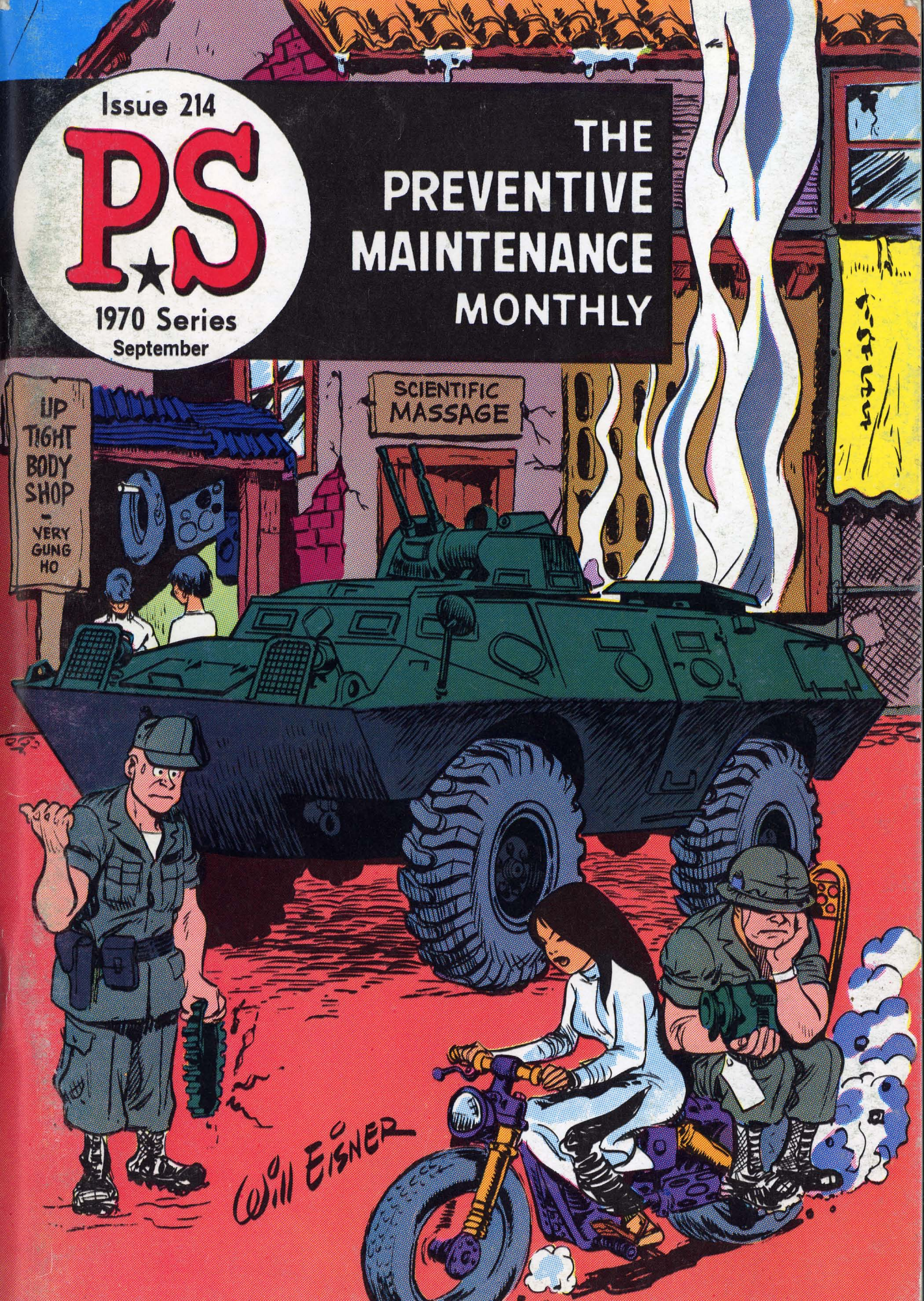
Issue 214
PS
1970 Series
September
THE PREVENTIVE MAINTENANCE MONTHLY
UP TIGHT BODY SHOP — VERY GUNG HO
SCIENTIFIC MASSAGE
Will Eisner

DIRT T

No matter where you are . . . Southeast Asia, back in The World, in Europe, or wherever . . . dirt will clobber your equipment.

Right now in some parts of the world it's dry. In other parts, this is the wet season, and you're not bothered by dust. But, you can get your bearings and brakes ground up with mud.

You can't keep all dust (or mud or whatever) off your equipment. After all, your gear is there and stirring up whatever's around. You can, tho, do a lot to make sure it does the least damage.

Clean it off before it builds up. Operate equipment, when you can, where less dirt will be stirred up. For example, don't run a generator flat down in dust and sand when you could put it up on timbers or on a platform.

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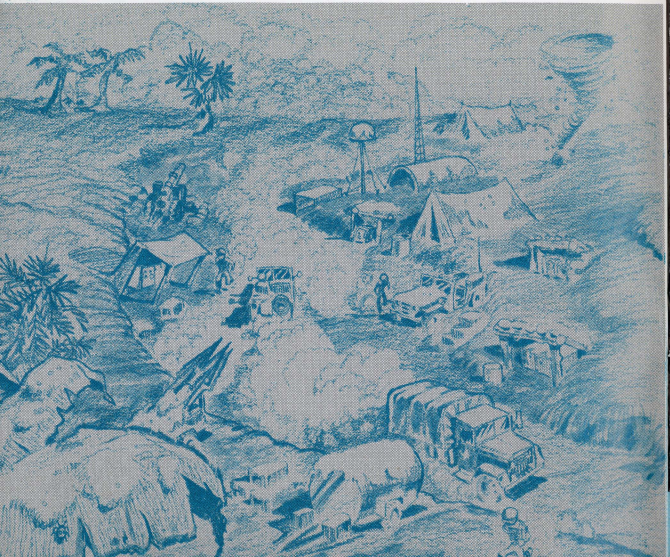
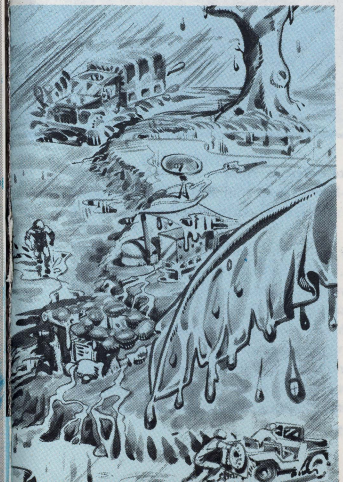


On equipment with filters, like engines and electronic gear, make sure the filters are letting air in. Clean or change the filter elements before they cut off the air. A choked-up air filter will kill off the toughest equipment.

The more dust or the more mud you've got to contend with, the more you have to protect your equipment from it. That's about the kindest thing you can do for your fighting equipment. It's good PM.



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Sgt. Half-Mast,
PS Magazine,
Fort Knox, Ky.
40121

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It's a mite different, right—so it takes a bit of extra know-how to keep your XM706 or XM706E1 Commando armored car cruising along ahead of the pack.

You may know the new armored car by some other name . . . like the V100, the Buggy or the Duck. But, whatever you call it, here're some PM tips and reminders to help you with armored car care.

Like with any piece of new gear, you don't get behind the wheel until you've been checked out on the Commando. You can do damage in nothing flat if you're not hip to its needs. Spend all the time you need with its operator's and maintenance manuals.

COMMANDO GROUND MOBILITY

CONVOY LEADER, ESCORT BUGGY, PATROL WAGON...

COMMANDO CONTROL

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IN THE DRIVER'S SEAT

First off, never use 4-wheel drive on hard surface roads. Shift to 4-wheel drive **only** when you're headed into mud or sand, or when you're hitting the water . . . and then go into 2-wheel drive soon's you can. Saves wear and tear on the axle drive assemblies, and the no-spin differentials.

Watch it when you adjust the operator's seat. The scissors-type base can catch your fingers while you're raising or lowering the seat.

PS MORE

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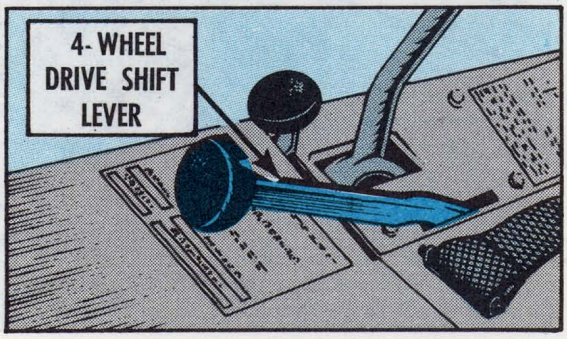

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PS MORE

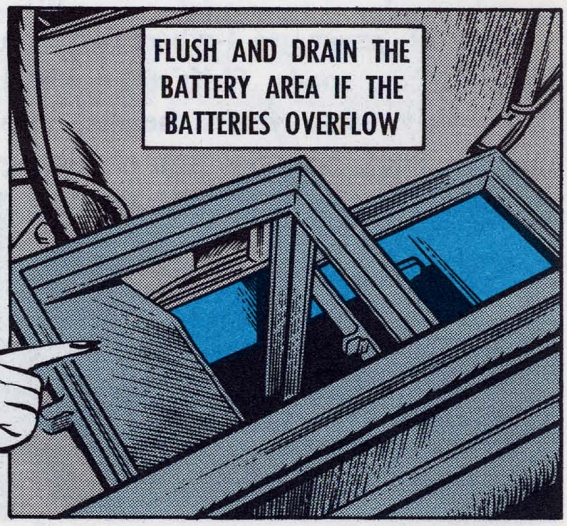
Natch, you always release the clutch easy-like, but especially so when the Commando's under heavy load . . . like pulling through heavy mud or deep sand. If you pop the clutch you overload the rear axle shafts and you can break 'em. You'll be able to continue on for a spell, but the busted shaft will eventually bring on differential damage that'll deadline your Commando.

Big thing to keep in mind is the Commando's terrific pulling power. If one wheel can grab, you can be sure the Commando will churn itself out of any messy spot. And, that's where your operating skill comes in. You never try to ram your way out of that kind of a jam. You ease up on the go-power until you have better traction . . . otherwise the overloaded wheel will do the job alone, and it can wrench an axle shaft in the process.

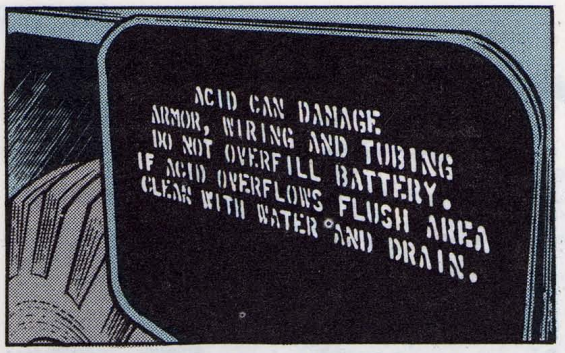
Same goes in watery crossings. Take it easy if you snag a rear wheel on a sandbar, tree or some other large obstacle. You'll save axle damage, maintenance and replacements.

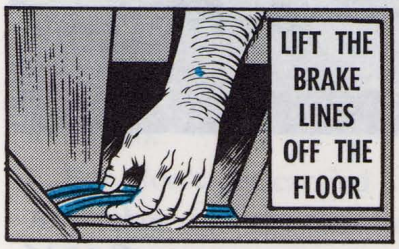
BATTERY PM

The rear brake-lines and the electrical wiring, running between the battery and engine compartments, will be damaged if the batteries overflow. So check for overflow each time you check the batteries. If there's been spillage flush the area with clean water and let it drain.



To hold down overflow keep the battery water level at about 3/8 inch above the plates. And, get this strong reminder, stencilled in white letters, inside the battery access door. Acid will damage armor, wiring and tubing. Do not overfill batteries. If acid overflows, flush area clean with water and drain.

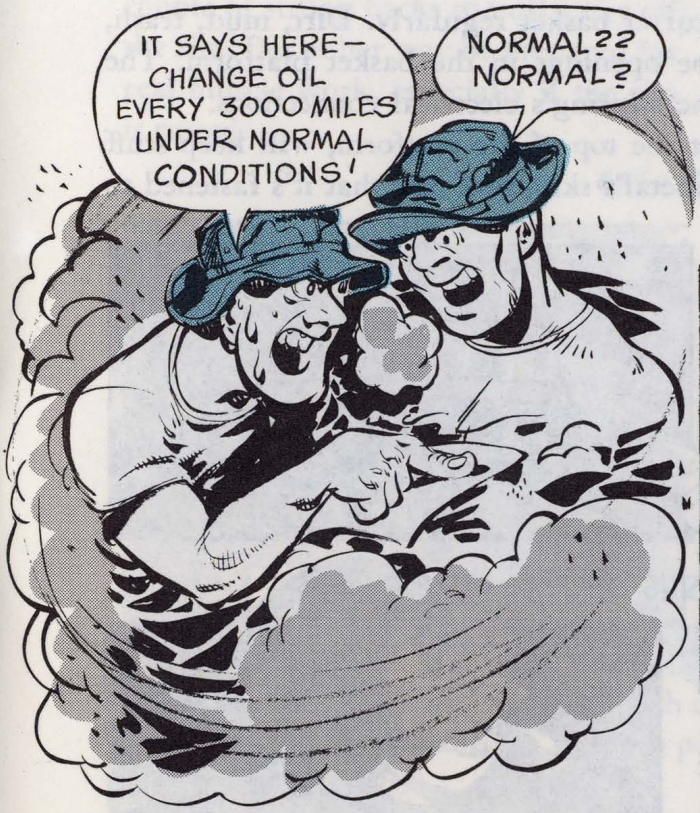




Something else that'll help is to lift the brake lines from 3/4 to 1 inch off the floor. You can reach the lines through the hole in the bottom section of the engine heat shield. Just pull up on 'em easy like.

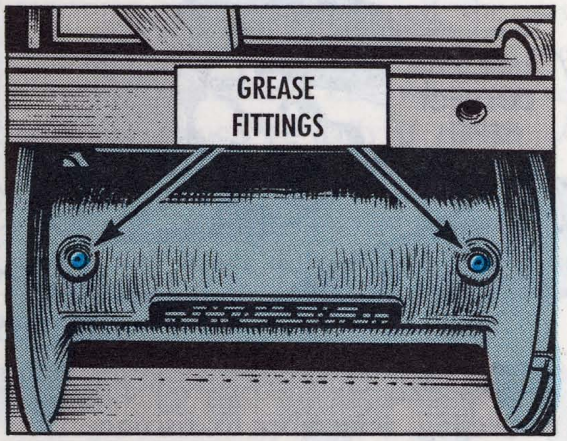
ENGINE OIL CHECK

Under normal conditions you lube the Commando by the LO on page 21 in the manufacturer's operator's manual, and on pages 39-40 in the manufacturer's maintenance manual. But, in real wet, rainy, hot or dusty climate, you have to lube the Commando more often.



In miserable-like sandy, dusty climate—or when you run a lot in mud or water, for example, the engine oil change may be needed at 1500 miles, instead of at 3000 miles, which is OK'd for normal operations. And, the vehicle may also need complete lubing care every 3 days or so—especially the U-joints, drive shafts, drag links, tie rod ends, spring and shackle pins, plus anything else underneath that's clogged or dry.

WINCH DRUM

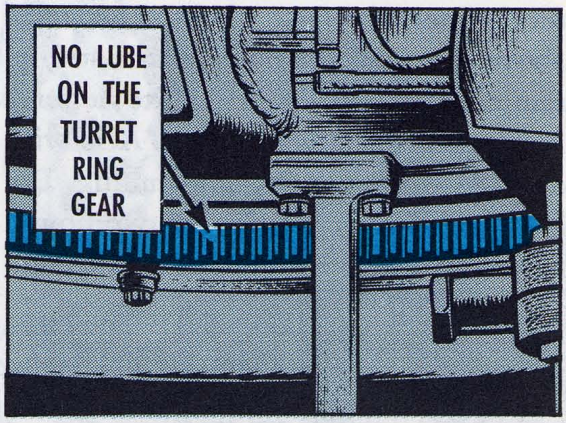


Remember to grease the 2 fittings on the drum when you reel out the winch cable for cleaning.

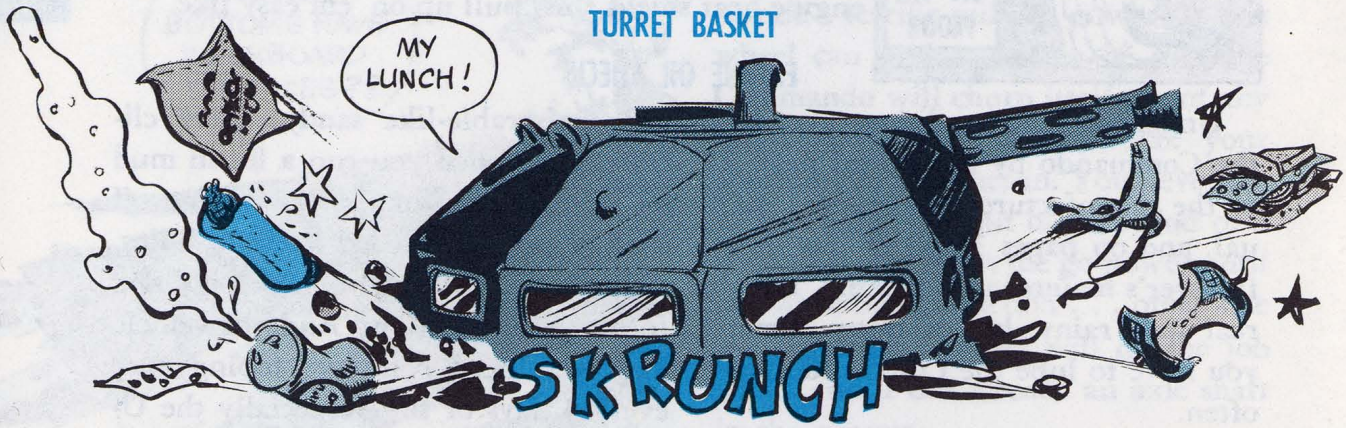
PS MORE

NO TURRET LUBING

One place you never lube, no matter where you are, is the Commando's turret ring gear assembly. The turret rides on plastic, **greaseless** bearings. Grease or oil of any kind in the ring gear will collect dirt and grime and cause binding and grinding . . . which'll interfere with turret operation and will damage the ring gear assembly.



TURRET BASKET



Be sure to police the area under the turret basket regularly. Dirt, mud, trash, expended brass, etc., falls through the openings in the basket platform. The stuff'll pile up and block or damage the slipring's electrical connections.

A piece of light metal, shaped to fit the top of the platform, will keep stuff from falling through. Just be sure the metal's skidproof and that it's fastened to the platform.

TRAVERSING CHECK

And, Mr. Gunner, before you start traversing, remember to disconnect the drop cord to your helmet's headset. Otherwise the cord'll get yanked out and the connector will be damaged.

ABOUT RUN-FLAT TIRES

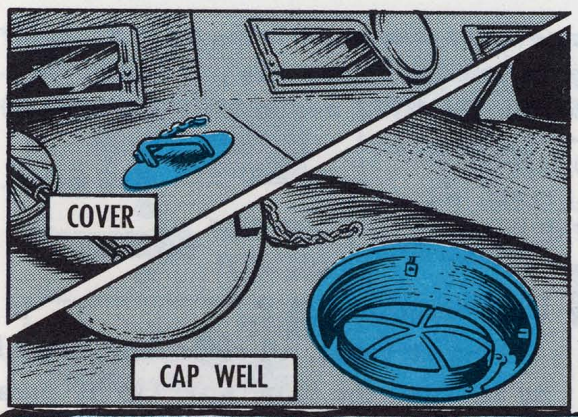
In an emergency you can run the Commando with flat tires for 50 miles or so — at up to 30 MPH, and you'll not lose steering control. With its special, 14:00 x 20, combat, run-flat tires (FSN 2610-934-2432) you can bug out of a hot spot even with flat tires. The tires may end up in shreds, but you'll be safely home . . . or, wherever you have to bug to.

But, don't get carried away . . . the run-flat deal is strictly for **emergencies.** Any other time the tires are due the best PM you can possibly give 'em.

For example, you can't tell if a run-flat tire is flat just by looking, or even by kicking the tire. You have to use the tire gage. So, check 'em real often, especially when you're riding rough trails a lot.

Use the tire demounter (FSN 4910-683-9362), like it says in para 5-123 in the maintenance manual. If it's not handy you'll have to make-do with the pry bar, some soap solution, and a couple of strong backs to pull a tire off the rim. But either way be prepared for real muscle work, especially if the rim is rusted.

GAS CAP WELLS



On earlier model XM706's, rain and moisture can collect around the gas tank caps, so you have to make with the wipe cloth as needed. Like when you're going to refuel, or daily if the Commando's just sitting there sweatin', or it's rainy weather. If you forget this chore the water'll build up and can sneak into the fuel when the cap is removed.

LEAKY WINDOWS

You can seal leaky windows with caulking compound (FSN 8030-598-9424). It's listed on page 59, TM 9-2320-245-20P (May 69).

PS MORE

WATER SAFETY

If you have to back down into the water (from a sandbar, embankment, etc.), be quick about getting the Commando's tail out of the deep. If you go too slow, or the engine dies on you, water can quickly swoop into the engine compartment —and glug, glug . . . you and your Commando will hit bottom fast.

PUBS

The operator's and maintenance instructions for the Commando are covered in manufacturer's manuals available from the U.S. Army Tank-Automotive Command, ATTN: AMSTA-MC, Warren, MI 48090.

Mfr's Manual No. 101236 (Apr 69), Car, Armored, Light, 4x4, Operator's Manual. (Be sure you have the insert for this manual. It covers the Commando's fire control equipment . . . its identification, use and BIIL.)

Mfr's Manual 101927 (Feb 70), Car, Armored, Light, 4x4, Maintenance Manual.

The only DA pub available on the Commando is TM 9-2320-245-20P (May 69).

M73 and M73E1 Machine Gun — Operator maintenance info is in the manuals for combat vehicles that use the M73 and M73E1, like:

TM 9-2350-224-10 — M48A3 tank
TM 9-2350-215-10 — M60 tank
TM 9-2350-222-10 — M728 CEV

Operator's Handbook, M73 and M73E1 Machine Gun (Apr 69). This green covered book was published by the U.S. Army Weapons Command, ATTN: AMSWE-SMM, Rock Island, Il 61201 'specially for the Commando.

TREAT TWINS ALIKE

Dear Half-Mast,

The differential in the M113 APC is the same as the differential in the M113A1, right? So why 2 different procedures for adjusting the steering brakes, like you find in TM 9-2300-224-20 w/Ch 1, 2, 5, 10 & 13 (Oct 69) for the M113 and in TM 9-2300-257-20 (Feb 69) for the M113A1?

SSG E. A. P.

Dear Sergeant E.A.P.,

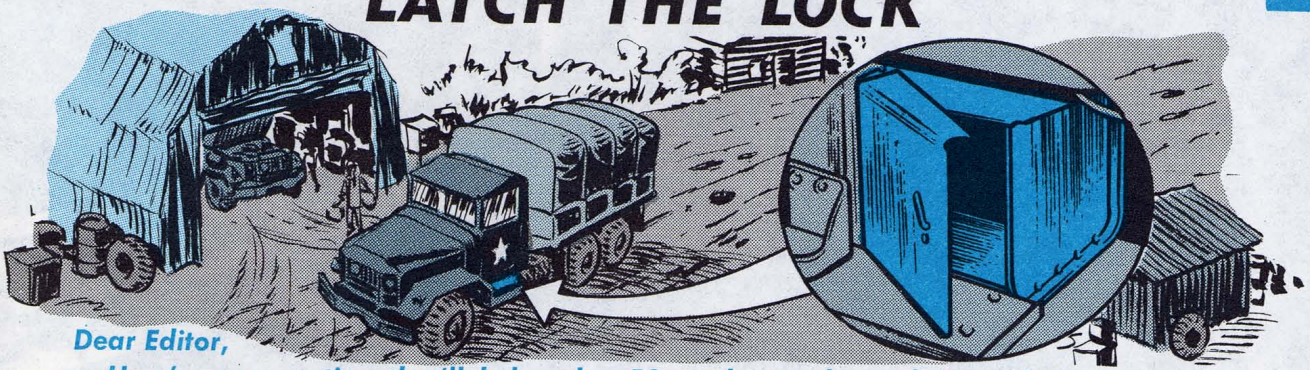
They're twins, all right, and should be adjusted the same way. Go by para 2-192 in TM 9-2300-257-20 for both of 'em. This procedure will be picked up in a TM 9-2300-224-20 change or revision.

Half-Mast

5-QUARTER PUMP

Be sure to specify Part No. 944561 when ordering Kit, Fuel Pump and Mounting Gasket, FSN 2910-927-3286, for your M715 1-1/4-ton truck or M725 ambulance. Order by exception data type requisition and add "No substitute accepted." Under the same FSN but a different PN (930144), you'll get a single action pump instead of the double action job you need.

LATCH THE LOCK

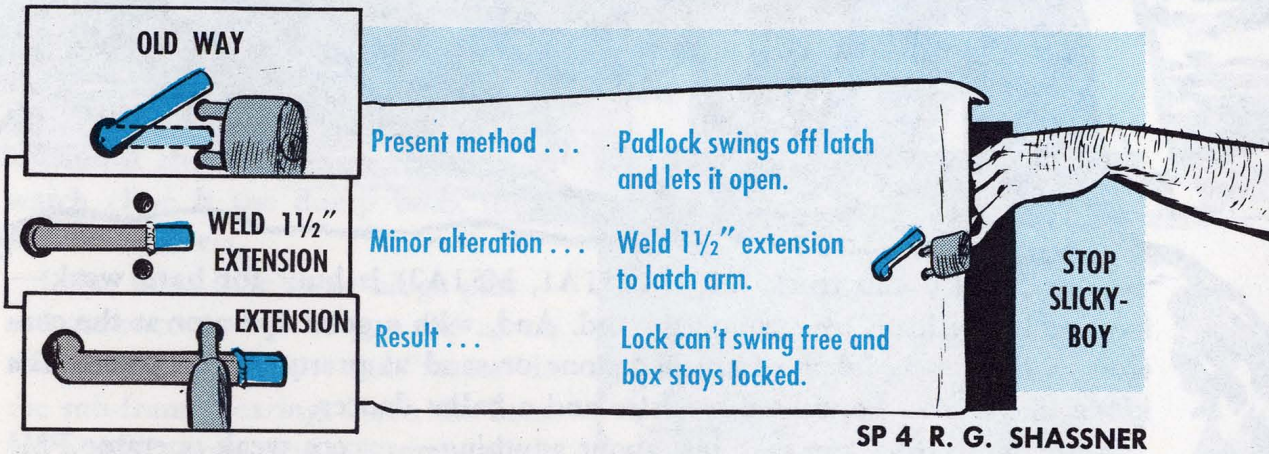


Dear Editor,

Here's a suggestion that'll help other PS readers to keep their truck maintenance tools from disappearing.

Normally, when the 2½-ton truck cab tool box is padlocked, it's possible to juggle the padlock and slip it over the latch arm and open the box . . . bye bye tools, then no maintenance.

To stop this slicky-boy action just lengthen the latch arm so the padlock can't slip over it. It works like this . . .



SP 4 R. G. SHASSNER
8th Army, Korea

(Ed Note—That's a groovy fix and it looks like it'll work on the 5-ton truck tool boxes, too. The latch arm extension has been OK'd for installation at organizational level by U.S. Army Tank Automotive Command.)

Your 5-ton dump truck (M51, M51A1, M51A2) is built for hard work—hauling heavy loads over rough ground. And, with a good operator at the controls, it can lay a ribbon of crushed stone or sand as pretty as you please. It's kinda like a cross between a wrestler and a ballet dancer.

Your dump truck can take just about anything—except weak operator PM! It depends on you to keep moving parts lubed . . . to notice loose, broken or missing parts and get 'em tightened, repaired or replaced . . . to operate right so things don't get busted up.

There're a lot of "weak links" that can stop you cold—if you let 'em happen.

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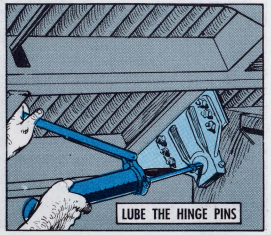
F'RINSTANCE . . .

One of the places you really gotta watch close is the dump body hinge pins 'n' brackets.

Lube, lube, lube those hinge pins — at least once a week! If you slip up on this deal, the pin'll rust and "freeze" in the sub-frame bearing. Then the bearing weld'll crack. And this means a trip to DS for repair.

Every one of those "weekly" lube points in your LO 9-2320-211-12 (Apr 68) is mighty important!



(PS MORE

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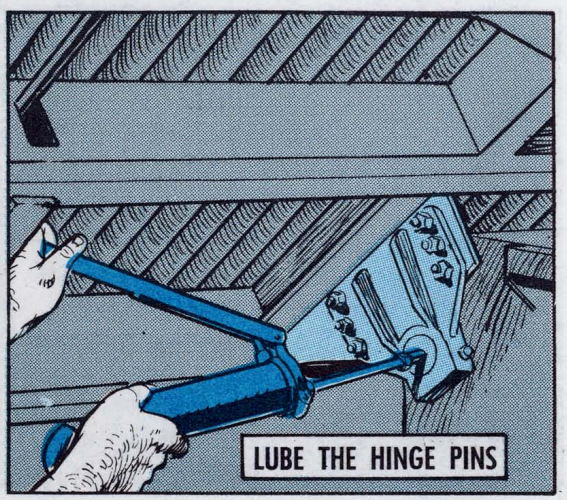
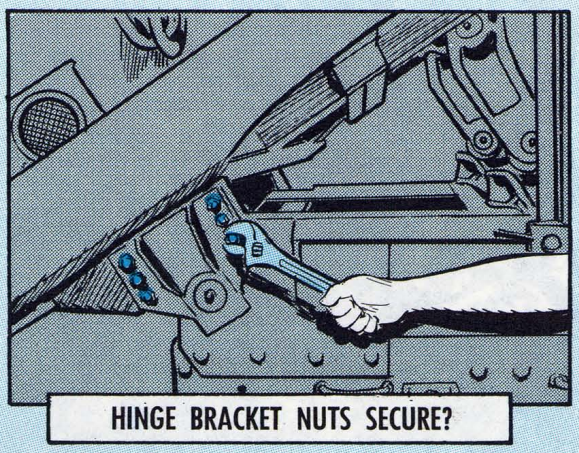
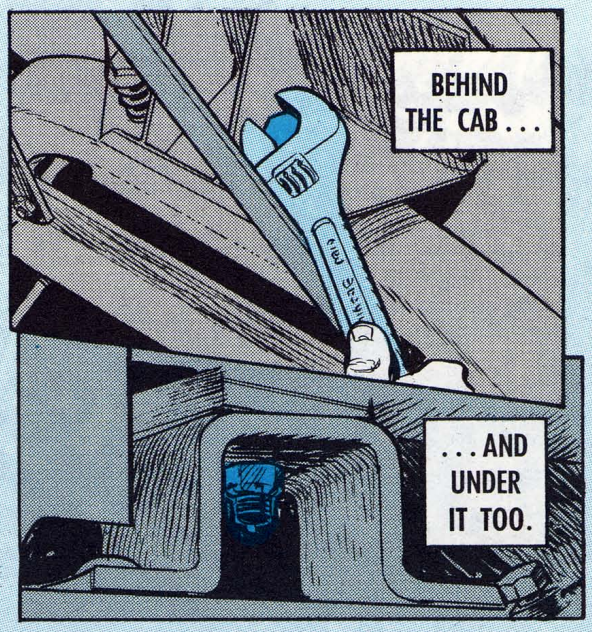


PS MORE

NUT ON THE LOOSE?

When you're checkin' around for loose parts, make sure you put a wrench on those hinge bracket nuts 'n' bolts.



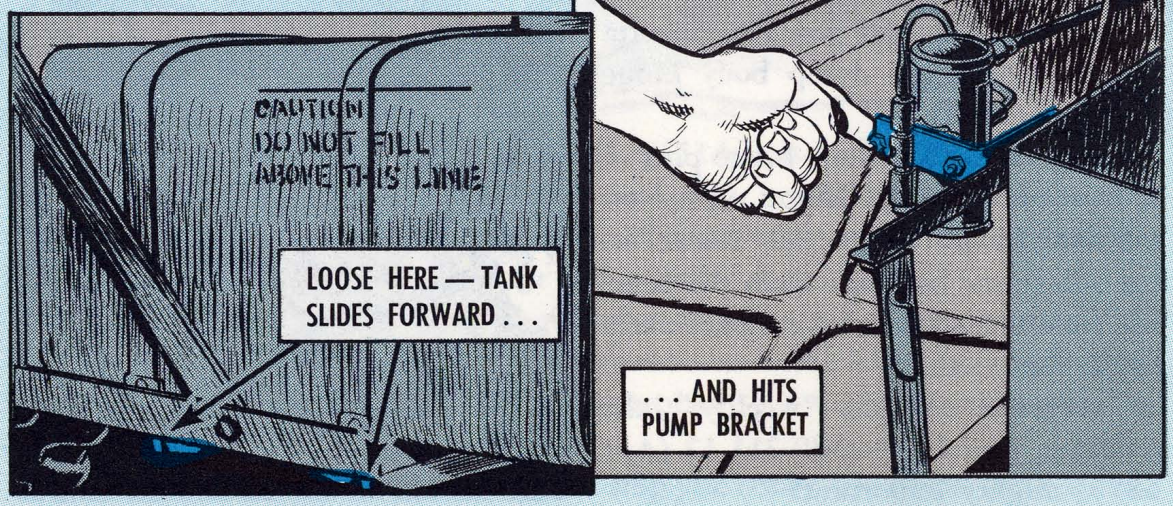


They sometimes have a way of working loose. Since they're what hold your dump body on the truck, you can imagine what'll happen if they fall off! If you just can't keep 'em tight, get your mechanic to work them over with his tools.

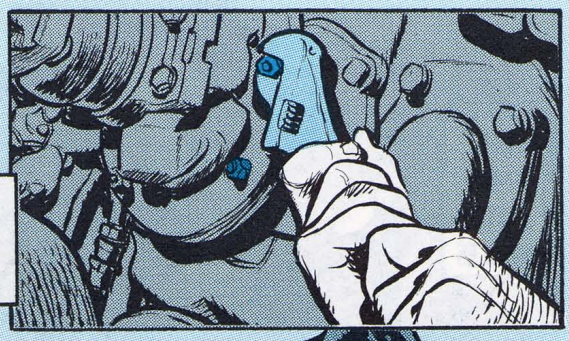
The nuts are s'posed to be on the outside of the bracket. There've been cases of the nuts being installed on the inside where the bolts can get fouled up with the sub-frame. If yours are wrong, get 'em put on right — and keep 'em tight.

Check often, too, on your cab mounting bolts. Traveling over rough ground can loosen 'em — then your cab will shift forward, jam your brake shaft so it can't release and lock up your brakes. Keep your cab mounts tight!

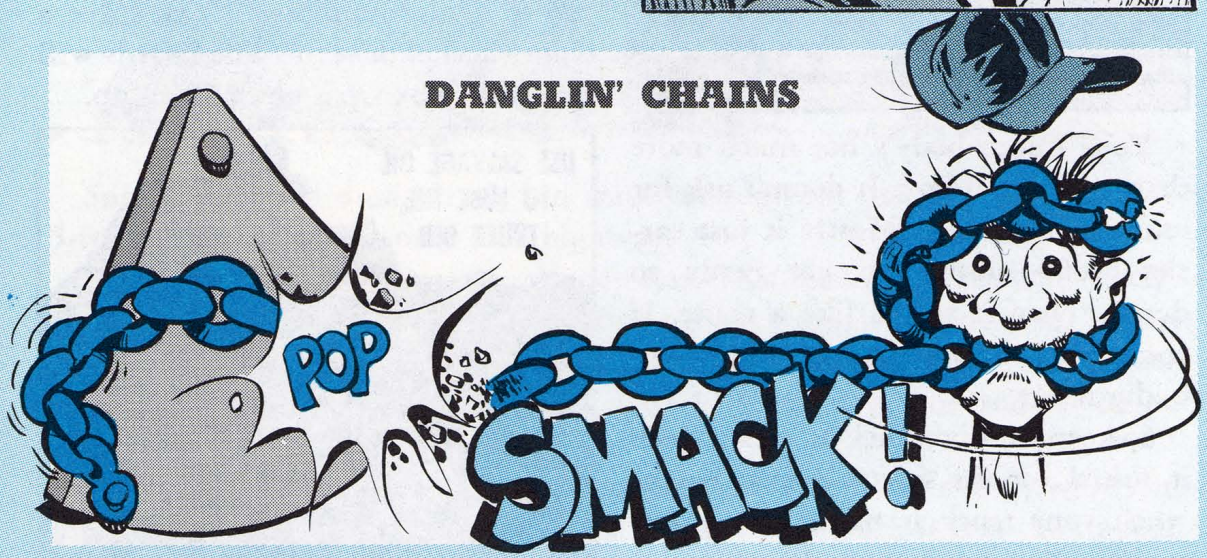
Loose fuel tank straps? The right fuel tank, especially, has a way of loosening up. This lets the tank shift forward. And you wind up with the fuel transfer pump bracket damaging your fuel tank. Check those straps — on both fuel tanks — and keep 'em tight.



And how 'bout your transmission-to-transfer prop shaft? Keep a close eye on those bolts. Loose? Get 'em tightened.



DANGLIN' CHAINS



Just one cracked link in a tailgate chain can give you one big fat headache—when you least expect it.

With your tailgate open at the bottom for spread dumping, your chains are used to adjust the size opening you need. A cracked link will let go when your load puts pressure on the tailgate.

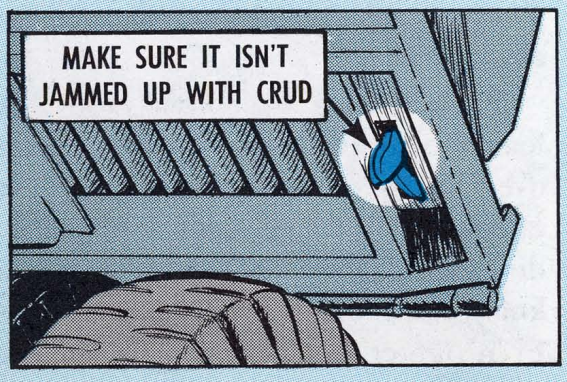
You're just beggin' for cracked links when you let your chains dangle and bang against your truck.

Even worse, a dangling chain can whip the head right off someone walkin' alongside the road. It has happened!

So keep those tailgate chains stowed snug when you're not using 'em.

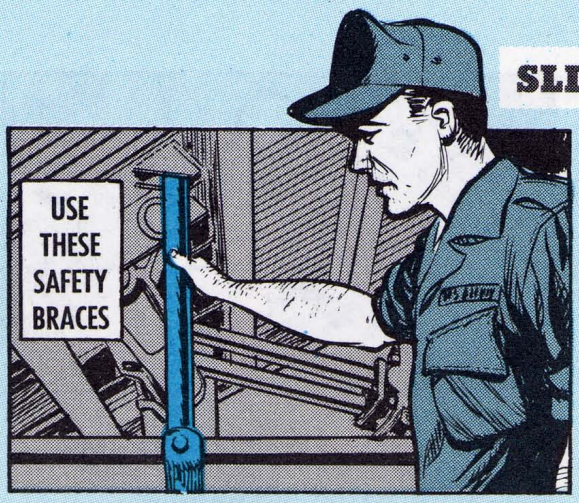
STOWAWAY STONES

There's no sense tryin' to force your tailgate control rod—you'll just bend or bust something. If your control doesn't work pretty easy, you may find the trouble is stones 'n' dirt 'n' stuff jammed against the rod. The left rear stake pocket can get packed full, so ram it out with a stick to give your control rod operating room.



PS MORE

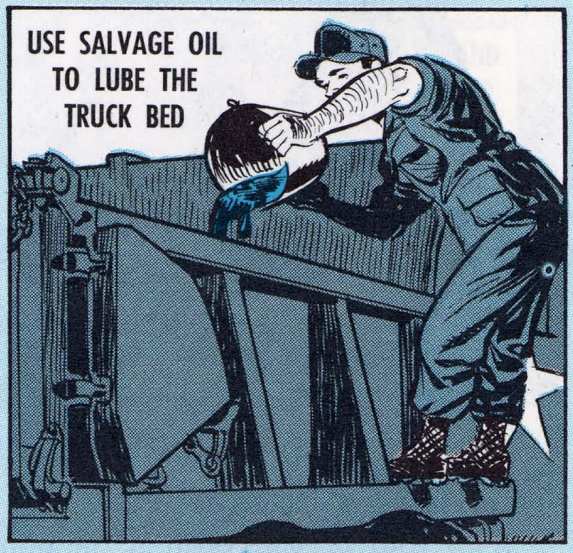
SLICK BOX



Your dump body's not much more than a big steel box. It doesn't ask-for much maintenance. Mostly it just carries stuff — until you get ready to dump. Then it works like a chute. If your load won't slide out, you'll have to dig it out.

So keep your box slick 'n' clean. Keep it raised (on its safety braces, natch) when your truck is parked, so water won't collect in there and make rust. Keep it clean — no concrete or blacktop material left in there to dry. Fact is, when you're haulin' blacktop, slosh some diesel fuel or used crankcase oil in your dump between loads to keep that stuff from stickin' so bad.

Another dump-saver is a layer of boards in the bottom of the box when you're haulin' equipment that's got a blade, bucket or teeth. The boards will keep your box from gettin' torn up.



IT'S YOUR LOAD

You, the dump truck operator, are responsible for how your dump truck is loaded. It's up to you to see that you take on all you can safely haul — without getting too much. It's up to you to see that your load is positioned right — usually peaked in the center when you're handlin' loose stuff like crushed stone, gravel or sand.

You are the guy who makes sure the loader operator doesn't spill material over the side onto your truck's fuel tanks. A coupla big rocks or chunks of dirt dropped on your fuel tanks can knock 'em loose or bend their supports. Even lighter stuff will tear up the fuel and electrical lines on top of your tanks. So sound off — loud 'n' clear — when you see your dump truck gettin' clobbered.

DON'T LET THIS HAPPEN

LEAD FOOT

Sure, your 5-ton dump truck can travel at highway speed while carryin' a 5-ton load — but this's only on a highway.

One of the things that separates operators from butchers is knowin' when to load lighter and travel slower. Goin' full tilt over rough ground with a heavy load is just more than your dump truck can take — you could bust a spring or crack a frame crossmember. Or you could break a torque rod — or pull the bushing out of the shaft.

Trying to get these fastest with the mostest can leave you sitting with nothing but a pile of steel — because that's all your dump truck is if it can't operate like a dump truck.

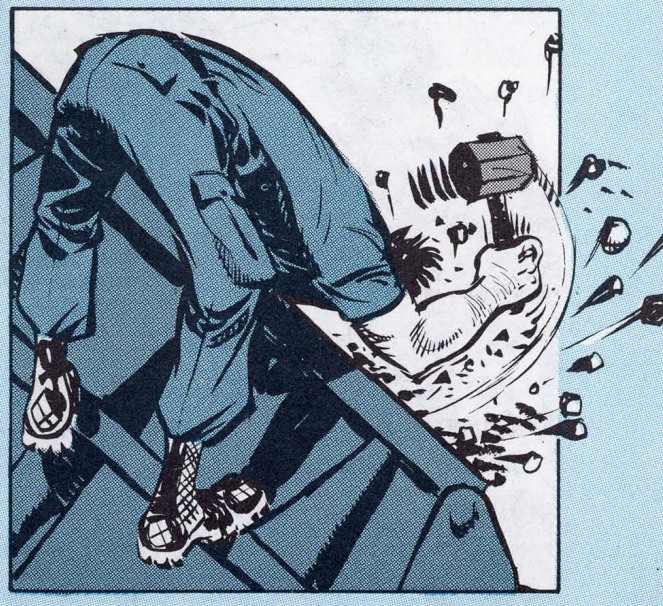
END OF THE LINE

Getting there is one thing. Getting rid of your load is something else.

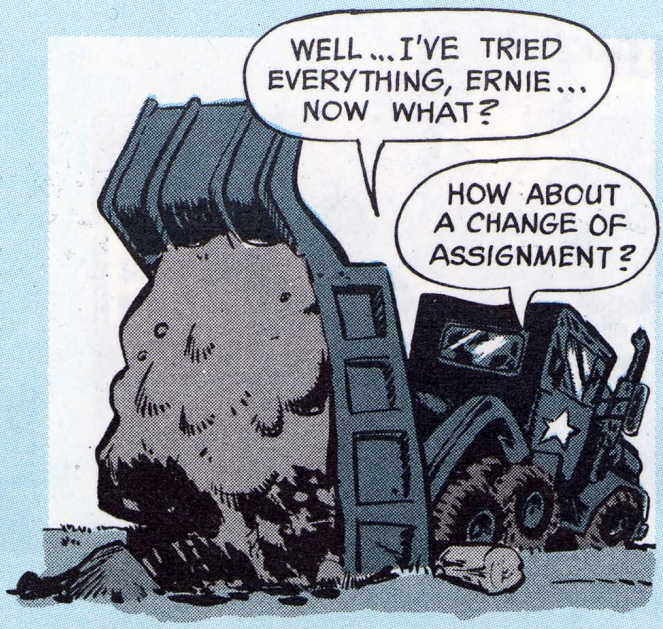
How easy it is — for both you and your dump truck — may depend on what you're carrying and how much.

Take plain ol' sand, f'rinstance — wet 'n' dry. You'll have no trouble dumpin' dry sand, no matter how much you've got on. With a good clean dump and a little help from your shovel, wet sand'll slide out pretty easy, too — unless you've taken on too big a load. Then you'll find it packed tight, almost in a hard cake, in the bottom of your dump — and mighty stubborn about slidin' out.

So chalk it up as a lesson — not so much wet sand next time — and dig 'er out with your shovel.



PS MORE



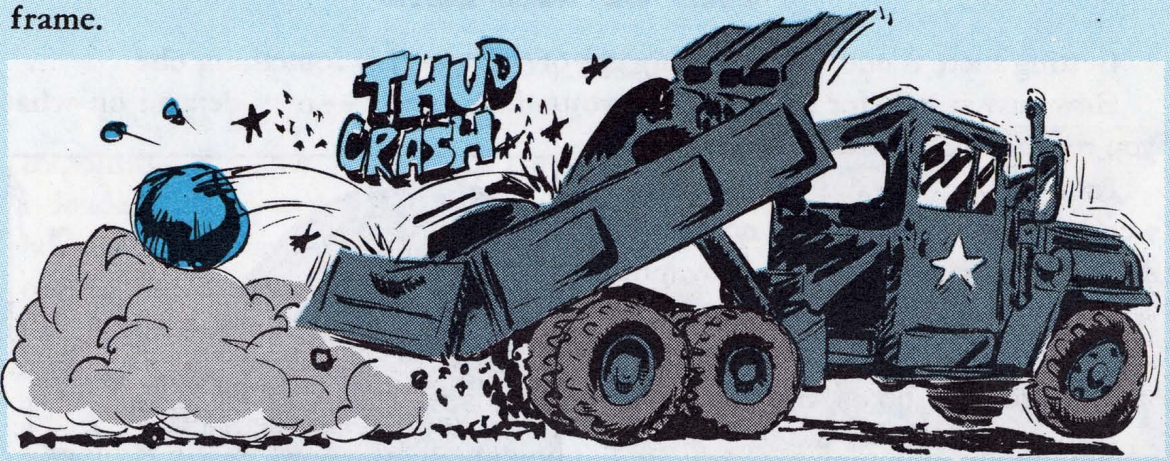
Never try to shuck out a stubborn load with the "shock treatment" — like backin' up your dump truck and then slammin' on the brakes. Or rammin' your rear wheels against a log or curb. Your hydraulic cylinders can't take it. You could even fold up your frame like a jackknife. If you don't bust somethin' the first time, you've sure started your poor ol' dump truck down a short road to ruin.

Break out your shovel — 'stead of breakin' up your dump truck.

SLOW . . . AND EASY

Your dump truck is no slingshot. There's not much use dumpin' your load in a big hurry — the time you think you're savin' will be lost, several times over, in down time when your hydraulic system finally calls it quits.

Your power system works hardest to raise that part of your dump in front of where your hydraulic cylinders are pushin' — and that's usually the biggest part of your load. Raisin' your dump too high too fast takes more work. Besides, you throw all that weight toward the tail end of your truck. If your load decides to stick, instead of slide out, you could tip right up on your tail or even snap your frame.



So, even with easy slidin' stuff, power up just fast enough and high enough to keep your material dropping' off your tail. This'll make room for the material up front to slide down — and lighten the job for your power system.

This, too, is why you keep a sharp eye out when you're being loaded. If you're takin' on a mixed load, like boulders and tree stumps, make sure the heavier boulders are set toward the rear of your dump — they'll be right there for first dumping.

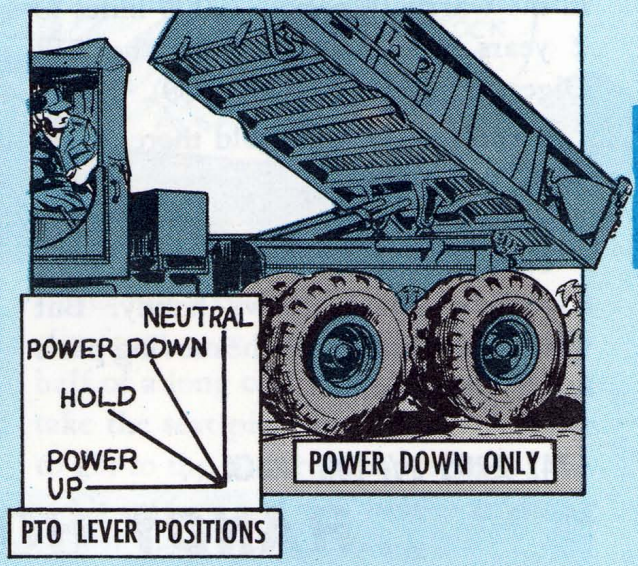
POWER DOWN

Ready to head back for another load?

Whoa, there—hold still till you get that dump settled back down. You could snag a limb or wire overhead you didn't see before. Besides, travelin' over rough ground with your dump up is too rough on your hydraulic cylinders and dump hinges.

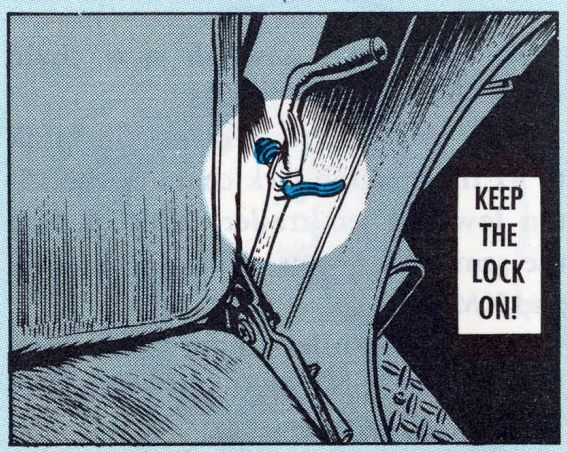
Some guys say it doesn't make any difference whether you power down or just slap your PTO control lever up into NEUTRAL and let your dump coast down. Other guys say coasting down will blow your hydraulic seals.

Here's the story on that argument: You power down only. If you let your dump down without power, you're headin' for trouble with your hydraulic cylinders—you can even bust your dump body hinges.



When your dump has been put back down snug and you're ready to take off, **make sure your PTO control lever is all the way back in NEUTRAL!** If you go runnin' around with your control lever just a little too far forward, you'll chew up the gears in your PTO.

And put that lock over in front of your control lever. It'd be bad enough if you accidentally nudged your control lever into POWER UP with a load of stone on—but it'd be downright tragic if you happened to be carryin' troops and dumped 'em while you were cruisin' down the road.



END

DOOR PANEL CLIPS

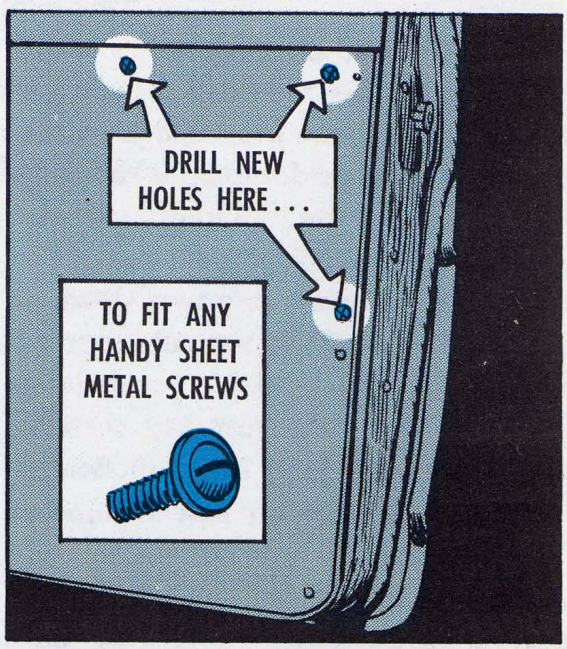
Do your thing for 1-1/4-ton truck door panel's that're missing retaining clips.

You can get new button clips if you're in the warranty period, 6,000 miles or 2 years. See Article 77 of the EIR Digest, TB 750-981-3, (Jul 69).

If you're out in the cold there, comb your "can point."

Still no go?

Then drill new holes for the size of any sheet metal screws handy. But watch it — don't block the moving parts inside your door.



G742-SERIES 2½-TON TRUCK...

HANDY HOOD HANDLE

Now you can have a hood lifting handle on your 2-1/2-ton truck — just like you'll be seein' on new production jobs.

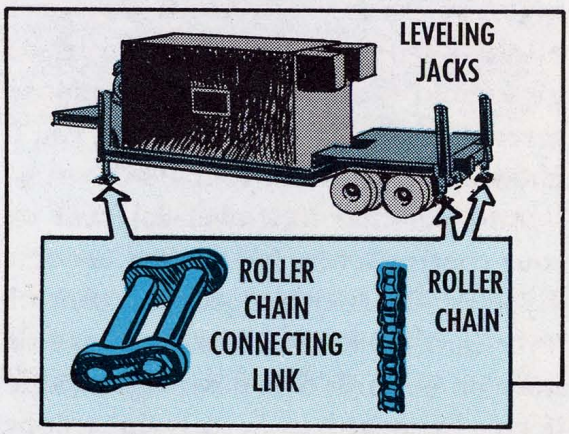
Article 3-7 in TB 750-981-3 (Jul 69) tells all — parts, drawings and procedure.

MISSING LINK FOUND

So who needs a whole new chain when just one link breaks?

Now you can get a connecting link to fix the leveling jack chain of the 15-ton low-bed semitrailer, XM674, and the semitrailer vans, XM681, XM682 and XM683.

It's called Roller Chain Connecting Link, with FSN 3020-580-9622 (PN 35-IRC-2CL-A).



M151A1 1/4-TON TRUCK...

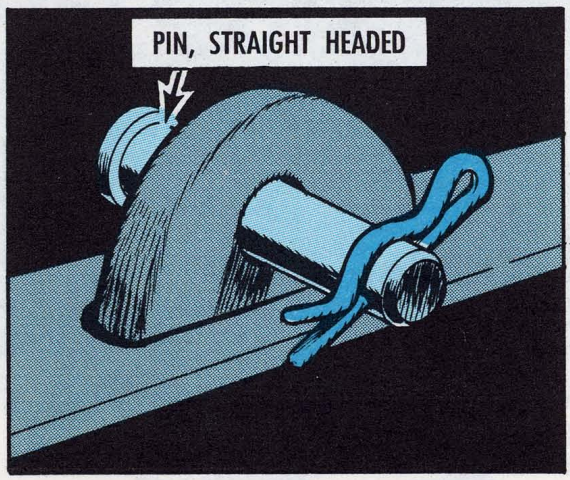
SEAT PIN MISSING?

How'd you like to be tossed over — or through — the windshield of your M151A1 1/4-ton truck?

No? Then you'd better make sure the retaining pins are in your front seats. When the pin's missing, a sudden stop can flip the seat up — and throw you like a rock out of a slingshot.

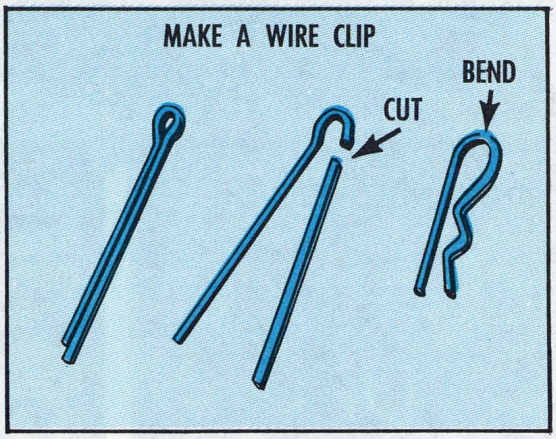
Sure, the pin's a non-stock item. But you may be able to get a replacement from your can point. Some guys use a straight-headed pin with cotter pin like's on the hand brake (see TM 9-2320-218-20P, Fig 56, Items 3 & 9, or Fig 57, Items 7 & 5).

Even better is Pin, straight, headed, FSN 5315-050-5016, in Fed Cat C5315-IL-A (Oct 69) — it's fatter 'n' longer.



Instead of a cotter pin, you can make a clip from wire — like a coat hanger or half of a long cotter pin. Then you can take the seat pin out quicker 'n' easier to get to the battery compartment.

Or use a nut 'n' bolt — anything that'll keep the seat down.



ELECTRONICS

RADAR RUNDOWN —

PM IS A BUDDY SYSTEM

Picture a wide-awake buddy standing guard on the perimeter of your fire base or NDP.

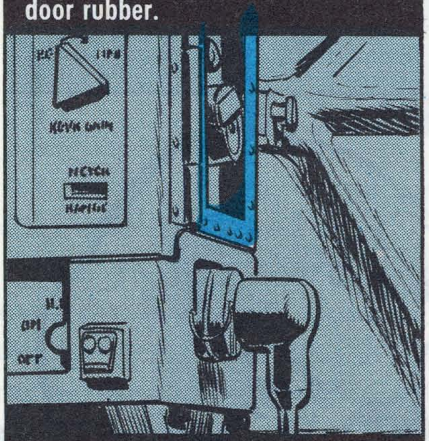
This troop is dependable; nobody and nothing goes undetected. Like, that kind of alertness helps you feel safer.

So where do you find this type?

As close to you as your AN/PPS-5 radar set. And . . . all it asks from you is a little PM.

Like so:

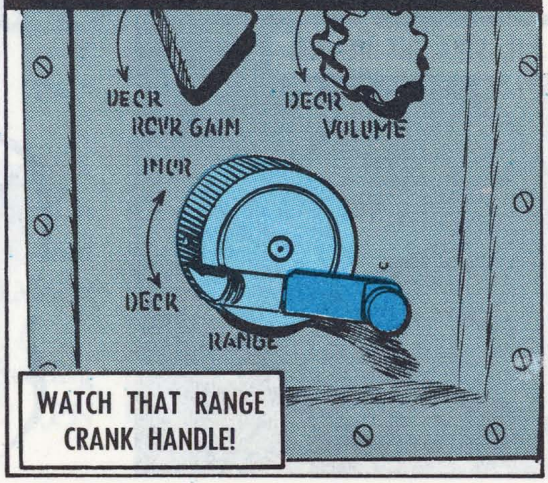
Protect the circuitry from dirt and moisture. Use silicone grease (FSN 6850-963-5402) on exposed gasket surfaces, range crank shafts and the receiver-transmitter access door rubber.



The grease keeps the gaskets from cracking and allowing in foreign matter.

The range crank and other knobs and switches work loose regularly. Tighten them and dab the screws with adhesive sealant FSN 8030-081-2338 . . . and check 'em regularly.

When you place the hood on the C-4610 control-indicator, be sure the range crank handle's folded. Otherwise, you can break off the knob.



WATCH THAT RANGE CRANK HANDLE!

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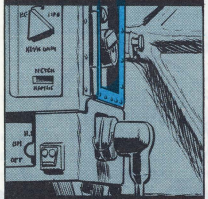

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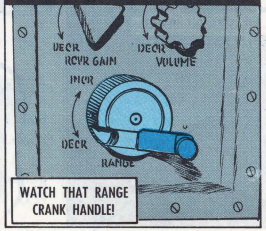
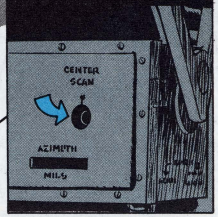


WATCH THAT RANGE CRANK HANDLE!

I'D BE A LOT MORE COMFORTABLE IF I KNEW THE KINDA PM MY OL' BUDDY'S BEEN GETTING.

Watch that exposed feedhorn window! Many are broken through carelessness or because some troops aren't aware of them. Big point: If the window breaks, don't patch it with plastic tape or such. Get it replaced.

Keep an eye on your SCAN ORIENT INDICATOR arrow on the receiver-transmitter. If it's 180 degrees out of phase (straight down), manually tune it until the arrow points straight up . . . otherwise, the set can't scan automatically.



The 50-ft remote cable needs help. Like, it never was robust, and stepping on it, yanking it, or otherwise treating it carelessly will put it . . . and you . . . out of business.

If your antenna won't rotate when you flip the 4-way antenna control switch, the arrow is probably almost straight down. So reset it.

PS MORE

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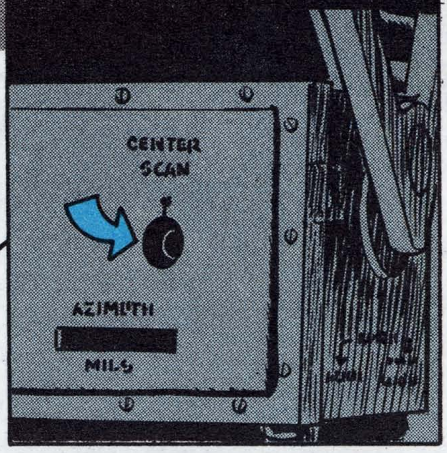

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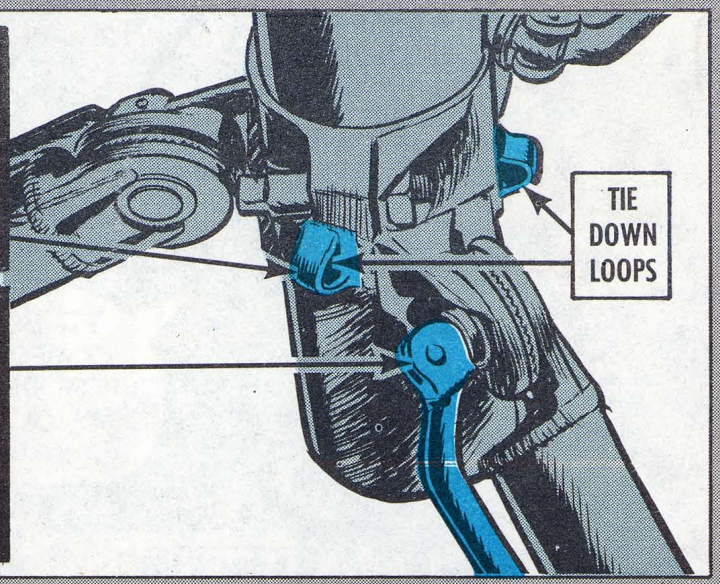
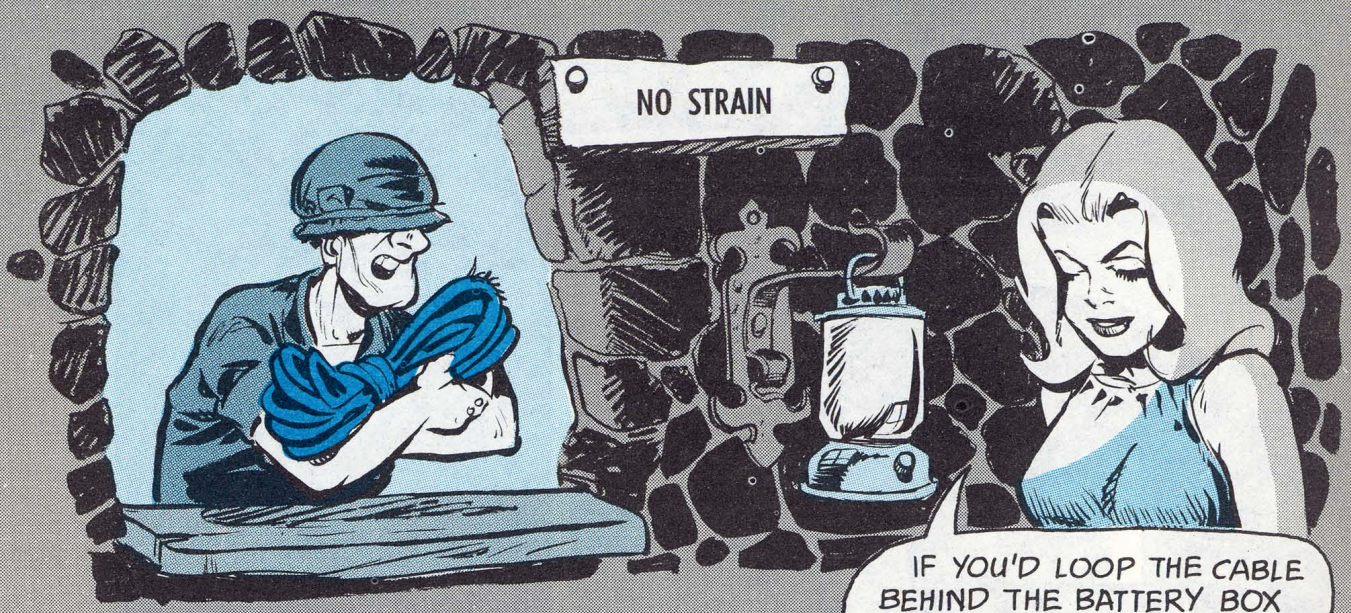
PS MORE

Coupla' reminders from way back: Spike down or sandbag the tripod legs to keep the set from blowing over and doing all kinds of damage. Use the loops on the tripod for rope or guy wire.

Don't overtighten or misaline the wing bolts or gear teeth on the tripod legs. Make sure the teeth mesh. Otherwise, you can pop the rivets, break the wing bolt or chip the teeth . . . resulting in the Pipsy falling on its azimuth.

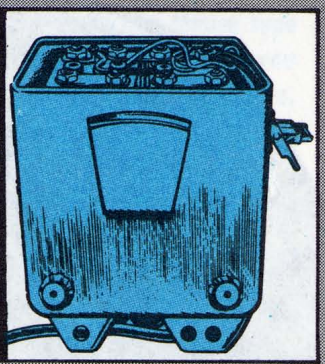




The 90-degree bend in the CX-8666 remote cable connector makes for aching muscles in the wiring when it's been dangling for a long time. The wiring inside the connector even pulls loose from the strain . . . putting your remote activity out of business.

So-o-o-o, loop the AN/PPS-5 remote cable behind the battery box to ease the strain.

BB-622 nickel cadmium battery cells differ in volume, according to model. Which means you've got to match the filler kit to the right model. Filler kits are packed with the battery. Each model battery requires a different amount and mixture of electrolyte, so if you should get 'em mixed, you can identify them like so:



The BB-622 plain model kit is marked with Contract No. DA 28-043-AMC-0215E, Model 4XHR58V, and contains 130cc of electrolyte.

The BB-622A has Contract No. DAAB05-68C-2056, Model 4XLR58, 140cc of liquid.

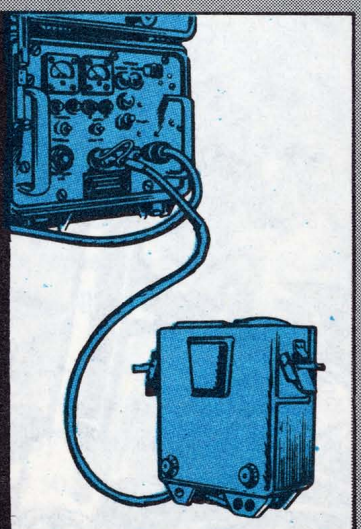
The A and plain models are made by Yardney Electric Corp.

The BB-622B is marked with Contract No. DAAB-05-69-C-3083. It's made by Eagle Picher Co., contains 160cc of liquid, and has no model marking.

If any electrolyte in the filler kits is accidentally spilled, it has to be replaced with KOH (Potassium hydroxide) FSN 6810-543-4041.

Eyeball the BB-622 cells at least once every half-hour during charging. If the cell gets hot, or spews electrolyte because of heavy gassing, shut the charger down and get the battery checked out. Chances are you've got a shorted cell . . . which means you turn it in for a replacement. Keep the cover open so you can see gassing or smoke.

Also, **never** use anything except the PP-4127 charger to charge the battery.



END

RA
AT
REA
IT GIVES YOU A SENSE OF SECURITY TO KNOW YOU'VE PERFORMED TOP-FLITE PM ON YOUR PIPSY-4!

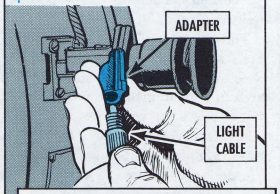
RADAR AT THE READY

It's comfortable to live with. Like, it's been around so long you just take it for granted.

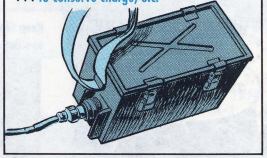
Fact is, you can get so familiar with your AN/PPS-4A radar set, you can be downright careless with it.

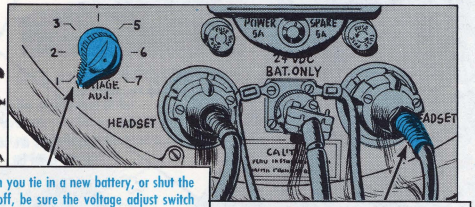
Knowing you wouldn't wanna be careless or forgetful, consciously or otherwise, here are some reminders to guide you back to the kind of care you know your Pipsy-4 needs:

Forget about trying a Mickey Mouse type hookup with your telescope light cable if you haven't got the adapter. Without the adapter, you can damage the connector and/or the jack.



Keep the cells of the BB-422 battery clean . . . to conserve charge, etc.





When you tie in a new battery, or shut the power off, be sure the voltage adjust switch is in the No. 1 position. Prevents transistor damage. (Be sure the power switch is off, too, when you connect a battery).

Broken cable connectors also are a penalty for familiarity . . . specially connectors keyed to jacks.

People turn 'em too hard, turn 'em when the key and keyway aren't alined, drop 'em on the ground, pull the cable right out of 'em by yanking the cable off instead of disconnecting by twisting the connector . . . and so on.

Cables, too, get it, prime among them being the battery power cable.

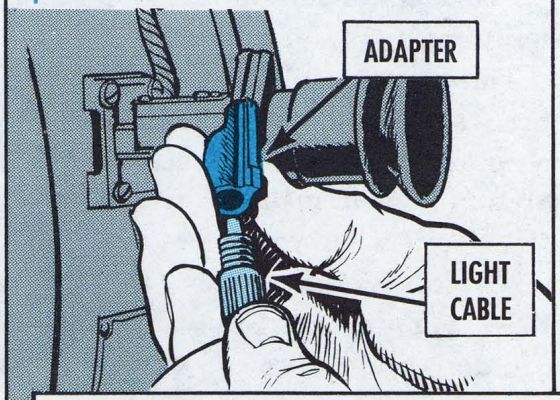
DAR THE DY

It's comfortable to live with. Like, it's been around so long you just take it for granted.

Fact is, you can get so familiar with your AN/PPS-4A radar set, you can be downright careless with it.

Knowing you wouldn't wanna be careless or forgetful, consciously or otherwise, here are some reminders to guide you back to the kind of care you know your Pipsy-4 needs:

Forget about trying a Mickey Mouse type hookup with your telescope light cable if you haven't got the adapter. Without the adapter, you can damage the connector and/or the jack.



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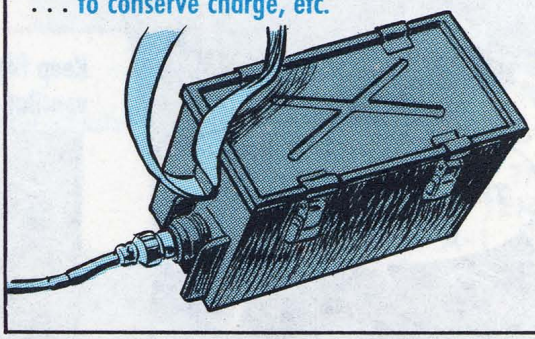

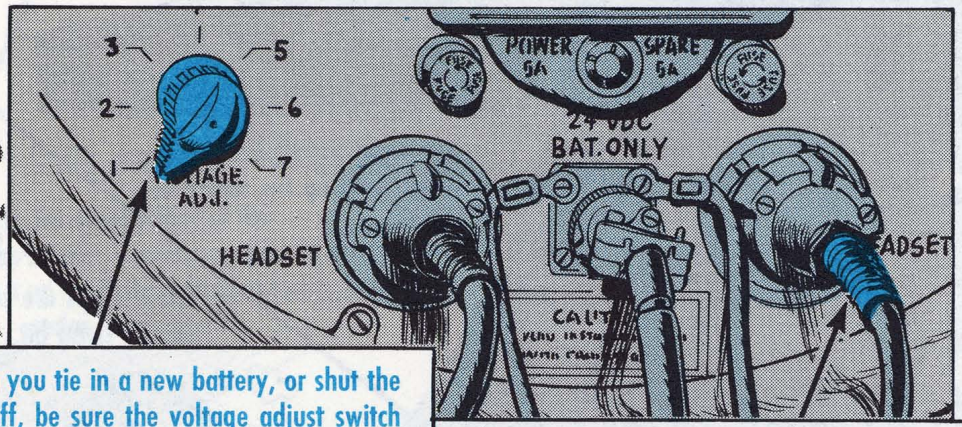

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Whaddaya do when the theme rings true, and the same ol' same applies to you?

Like, year after year the theme is clear: it's simple PM that gets you there!

You gotta. Your AN/TPS-33 radar set needs it.

The fact that ol' Tipsy 33 has been around for a good long time doesn't mean it'll stay around without maintenance. Granted is what you can't take it for. What you and FNG (Fightin' New Guy) can do is eyeball some old and new pointers.

Like with connectors.

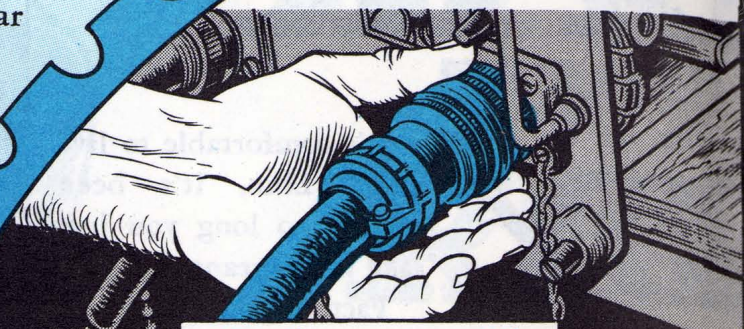
...SO HERE'S FOR THE PAIR WITH THE PM FLAIR.

TIPSY TIPS

SAME OL' SAME, SAME

CONNECTORS

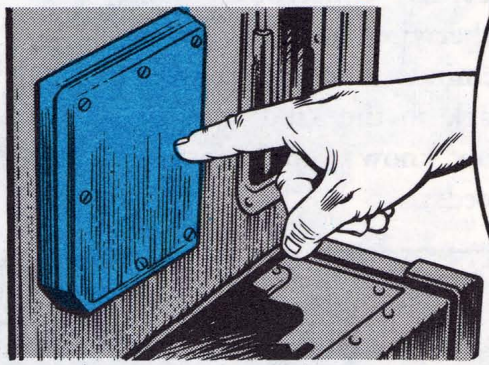
Match 'em up — male to female, key to keyway.



Turn the connector, not the cable . . . and slide or twist the connector off—instead of yanking the cable.

FILTERS

Keep filters clean . . . for good ventilation and no overheat damage.



Dirty power supply filters also can burn up the motor or the rectifiers.

IF STRIPS

The IF strips are sensitive to dirt. Ditto on the clean bit.

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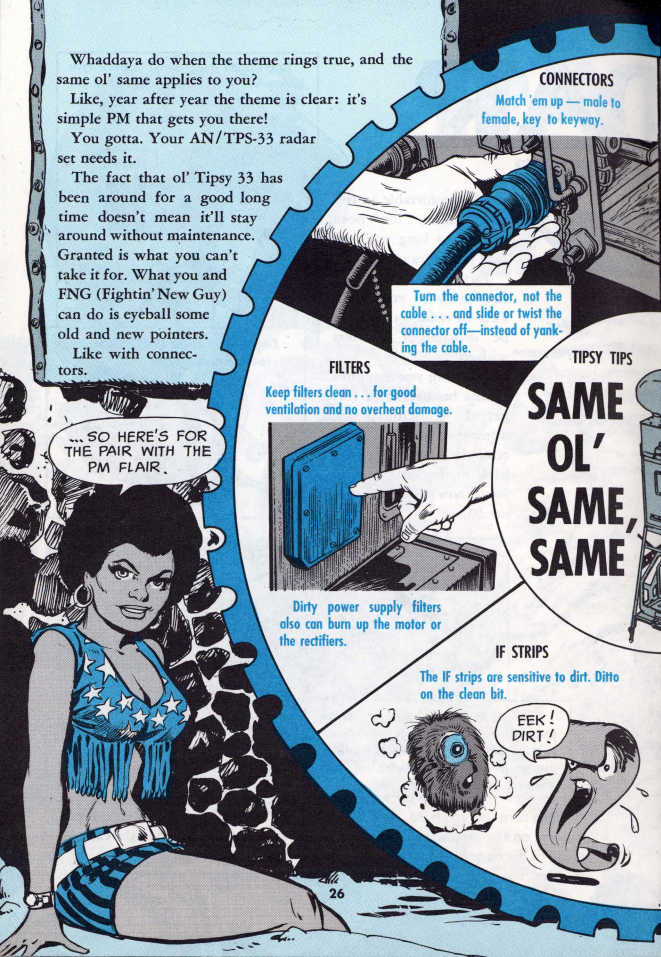

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TIPSY TIPS

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AT SCREW

It's not necessary to tighten the local oscillator attenuator screw (AT 102) all the way down. When you feel it stiffening, stop — and save a repair job.

Control your exhilaration from oscillation long enough to remember this other point: You can keep from blowing crystals by keeping a screwdriver away from the AT 102.

Adjust it with your fingers. No other tools necessary, and no damage potential.

INTENSITY CONTROL

Never leave the intensity control adjusted all the way up. It burns the scope.

SPEED ADJUST

Run the speed adjust of the PU-422 generator up slowly — whenever you adjust the juice dispenser. Taking it up too fast can burn out resistors in the radar transmitter.

An old, old reminder: check the generator set's oil level regularly.

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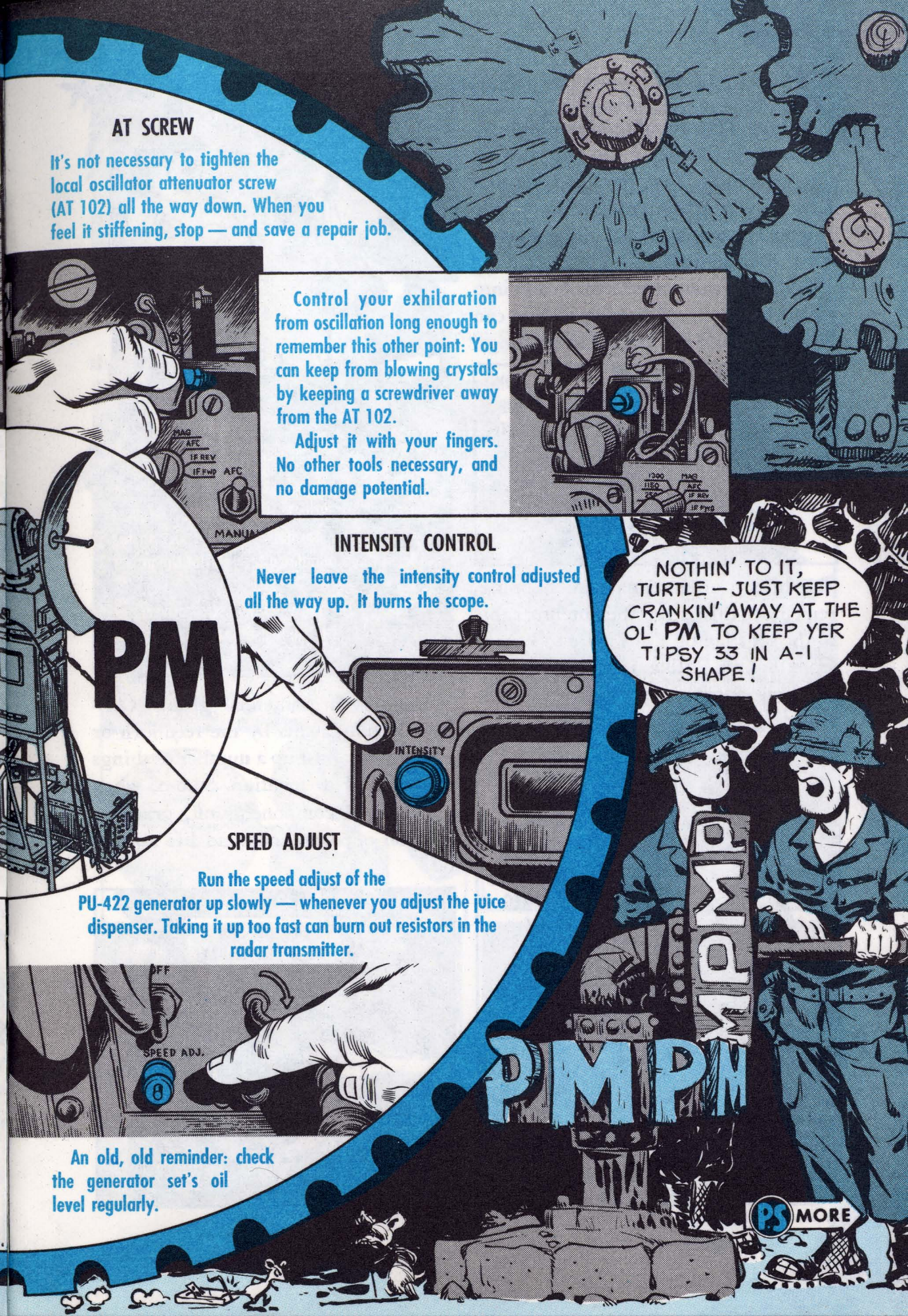
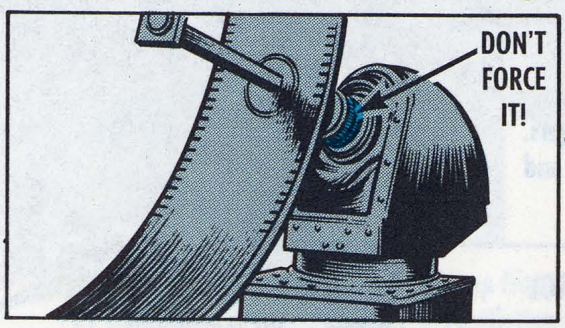
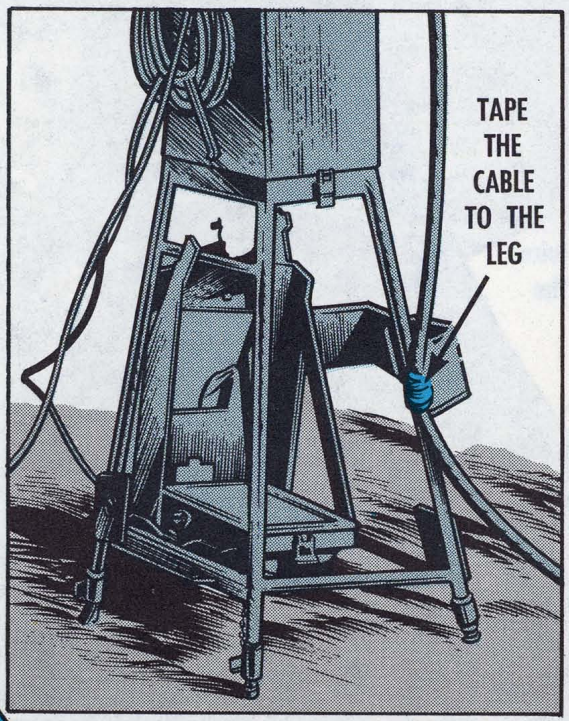


Follow TM procedures on all adjustments. Experimenting can put your set out of business. That, fren', is 100 proof Kentucky bourbon straight scoop. No Saigon Tea in that advice. Sip it slow — it's a BIG no-no.

Slide the antenna reflector firmly into place . . . but avoid forcing it. You can bend it . . . and get inaccurate readings.



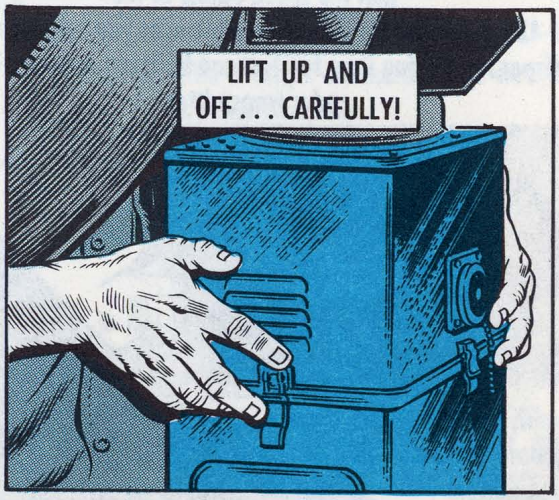
While your antennae are flapping, remember this: strap the antenna cable to the set's leg or a guy wire to keep it from flapping, like in a breeze, and breaking. Secure it whatever way necessary to prevent damage.

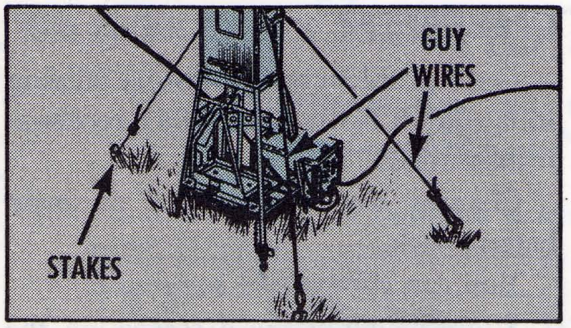


IMPORTANT POINT: the time delay relay in the transmitter normally does not kick in for at least three minutes after you put the power to it.

Tapping the relay with a screwdriver will get you no more than a damaged relay . . . or worse.

Lifting the antenna group (AB-658A) components by the feedhorn or pedestal can bust up a number of things too obvious to mention. So-o-o, when you lift the components off, grab the base on opposite ends and lift up and off.





Use the stakes and guy wires supplied, or otherwise tie the set down during field use. Keep it from blowing or falling over.

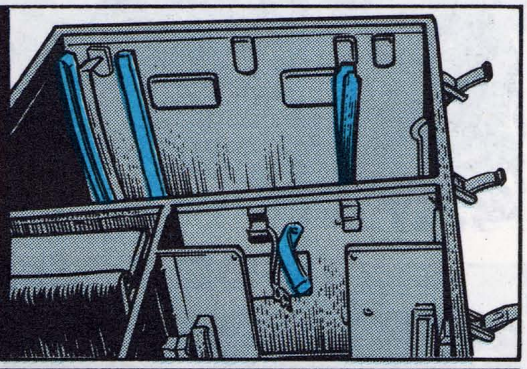
Keep components clean. Wipe off dust and dirt as it accumulates to keep it from sifting into circuitry, jacks and so forth.

STORAGE

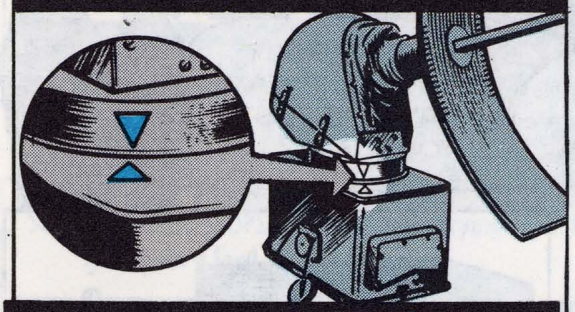
When you remove the components from transit cases, put the covers back on the cases and secure the clamps.

Not only does it save clamps, which snag anything that goes by, but it saves gouged flesh . . . maybe yours.

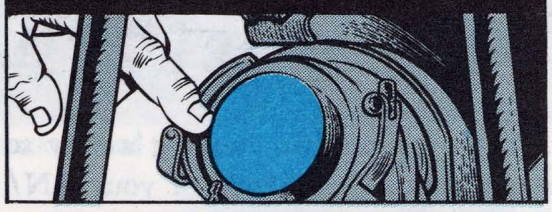
And when you re-pack the components, be sure the steel bands in the packing cases are recessed so's they don't snag the equipment . . . or break off.



Aline the white mark on the antenna pedestal and the base before you store the antenna group. Otherwise, it won't fit in the case right . . . you can crack the insulation, etc.

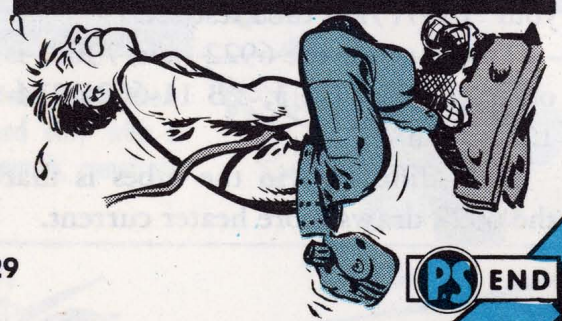


Slip the cap over the waveguide before you put the antenna pedestal into the rack for storage . . . and make sure it's still in place when you put the rig in the case. The cap is a must for keeping out foreign objects, like dirt and crud.



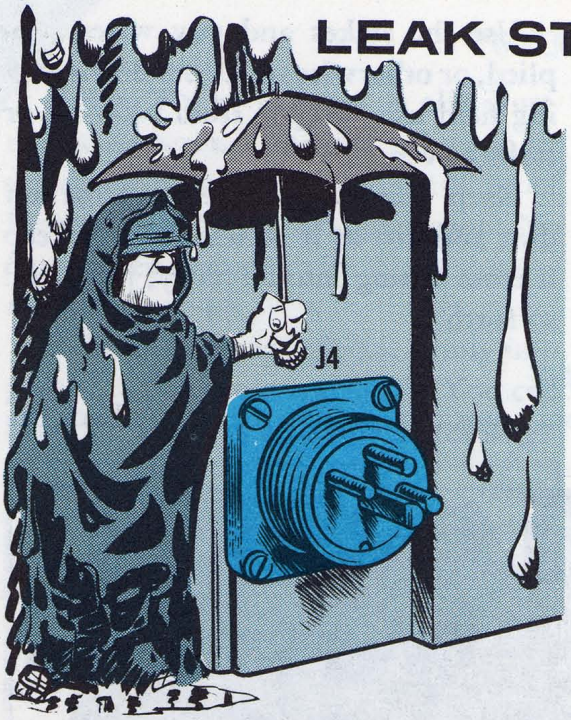
And, when you disconnect cables from the jacks put the dust caps on the jacks. Not only do the caps keep out dirt, they also save bent pins.

Finally, when you disconnect a cable, unscrew it at the front ring if it has one. Turning the cable at the rear ring can twist off wiring, damage the jack, bend pins and otherwise foul up the equipment.



END

LEAK STOPPER



Got a problem with moisture seeping into your RT-505 or RT-841 receiver-transmitters?

Chances are you've got a seepy battery jack.

You can cure it like so:

Slightly loosen the 4 screws on the J4 battery jack. About an 1/8-in turn will allow the jack to float . . . and put even pressure on the O-ring, re-establishing the seal.

Next time you put the RT unit in its case, check the O-ring for cuts or dry rot and give it a coating of silicone compound FSN 6850-880-7616 (8-oz tube).

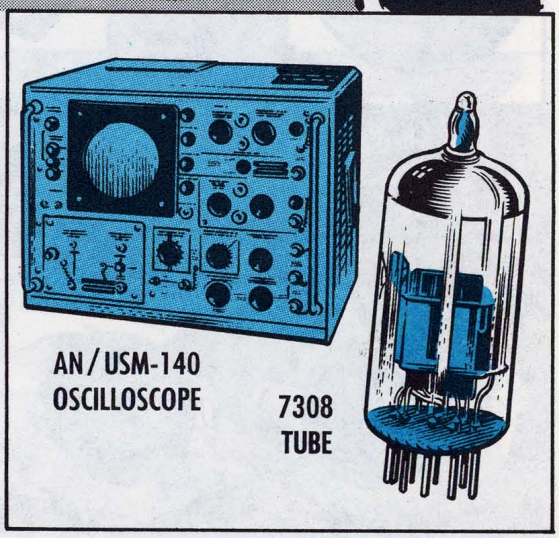
TUBE TEST SUBSTITUTE

Been losing hair figuring a way to test the type 7308 tube of your AN/USM-140 oscilloscope?

Sweat it not. The data for tube type 6922 gives you what you need to test the 7308 (also known by such names as V501, V502, V504, V505, etc.) with your TV-7( )/U tube test set.

Test data for the 6922 (and 7308) is on page 72 of Ch 3, TB 11-6625-274-12/1 (Jan 62).

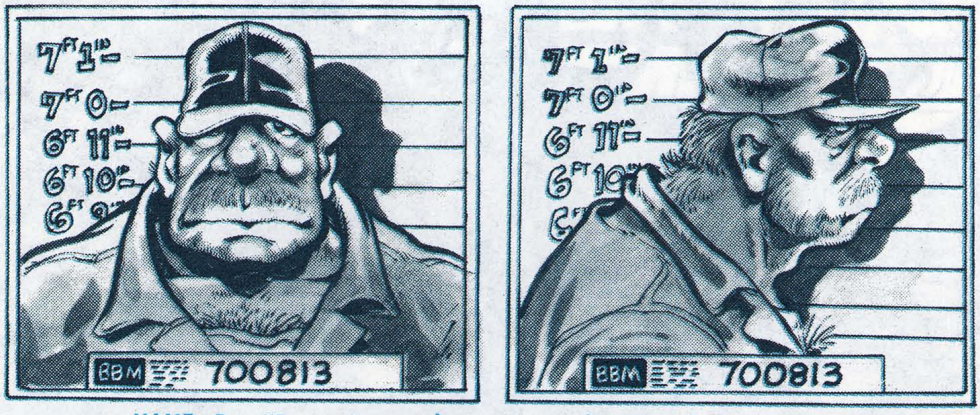
Only difference in the tubes is that the 6922 draws more heater current.



WITH FRIENDS LIKE THIS... **WHO NEEDS ENEMIES?**

WANTED

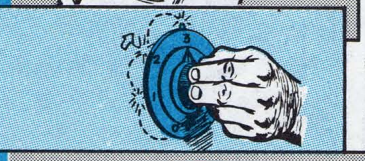
For Destruction of Army Commo Equipment.



NAME: Ben "Bruiser" Musselman. Known by several aliases, such as "Muscles," "Slambang," and "Fiddlefingers."

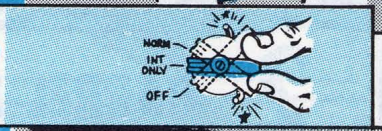
FORCE-STARTS ALL CONTROLS: His No. 1 rule is that all control-locks were made to be by-passed or over-ridden. He never unlocks-before-turning, as TM's say.

FIDDLES WITH ALL DIALS, BUTTONS, KNOBS: Disregards all sequences for turning controls. If TM rules say 1-2-3, he starts with 3 or works both ways from 2.



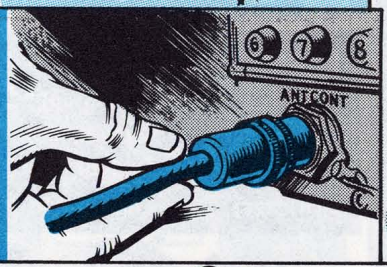
TWISTS FOR EXTRA OOMPH: Won't accept MIN-MAX limits. Always strains for just a bit more — or less. Swears those busted knobs weren't built for a MAN to handle.

SLAMS AGAINST STOPS: Like a slugger trying for a knockout (and he gets quite a few).



JAMS CONNECTORS IN — JERKS 'EM OUT: Never worries if they bend or break.

This buster often wears Army green, often had school training or OJT (but frequently calls it "kid-stuff," not practical, book-wormish). May be lean or heavy, short or tall, dark or light — but always proud of his free-and-easy style and muscle-power.



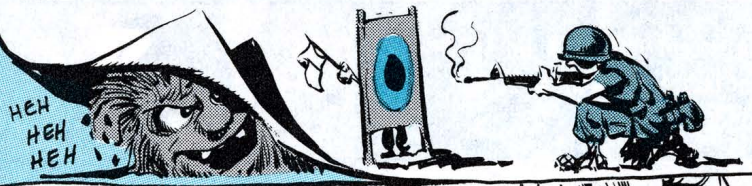
APPROACH WITH CAUTION: He may be armed with tools not authorized. Sometimes most dangerous when armed only with a screwdriver he uses on everything — to pry, punch, penetrate or pulverize.

M16A1 RIFLE BEARERS . . .

BEWARE THE

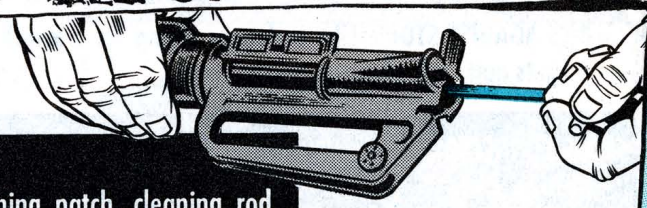
1. FRONT SIGHT

Problem:	Can't zero rifle.
Cause:	Front sight post, detent and spring rust frozen.
Rifleman:	Clean and lube sight with LSA/CR.
Armorer:	Loosen with bore cleaner (CR) and TM instructions. If this doesn't work ,turn in to DS.



2. BARREL BORE

Problem:	Blows up.
Cause:	Bore stopped up by cleaning patch, cleaning rod section, water, mud or other foreign matter.
Rifleman:	Eyeball bore before firing.
Armorer:	Can't repair. Turn in to DS.



RUN THE ROD FROM RECEIVER THRU THE SUPPRESSOR

BEWARE THE DIRTY DOZEN!

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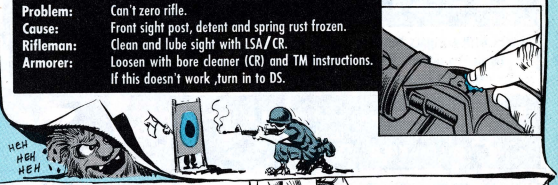

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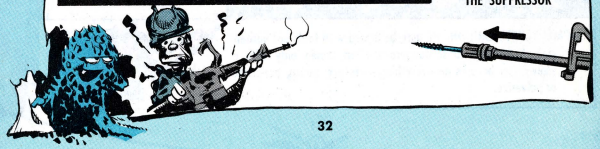
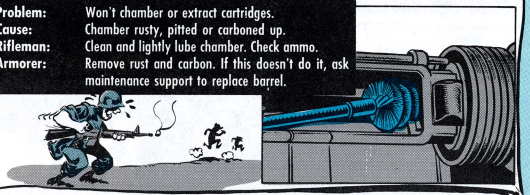


RUN THE ROD FROM RECEIVER THRU THE SUPPRESSOR

FIREPOWER

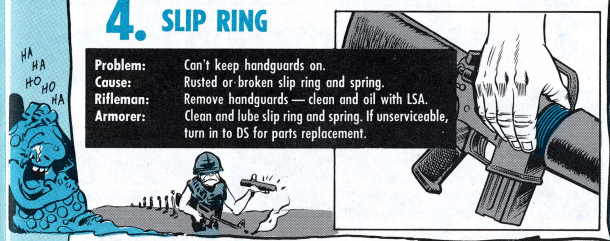
3. CHAMBER

Problem:	Won't chamber or extract cartridges.
Cause:	Chamber rusty, pitted or carboned up.
Rifleman:	Clean and lightly lube chamber. Check ammo.
Armorer:	Remove rust and carbon. If this doesn't do it, ask maintenance support to replace barrel.



4. SLIP RING

Problem:	Can't keep handguards on.
Cause:	Rusted or broken slip ring and spring.
Rifleman:	Remove handguards — clean and oil with LSA.
Armorer:	Clean and lube slip ring and spring. If unserviceable, turn in to DS for parts replacement.



5. REAR SIGHT

DISASSEMBLY ARMORER ONLY

Problem:	Can't zero rifle.
Cause:	Detent and spring frozen by rust and corrosion.
Rifleman:	Clean and lube sight with LSA.
Armorer:	Loosen with bore cleaner (CR) and TM instructions. Turn in to DS if this doesn't free up parts.

LOOSEN WITH BORE CLEANER

MORE

DIRTY DOZEN

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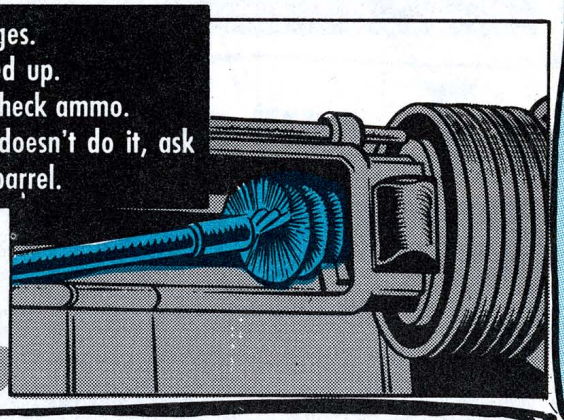

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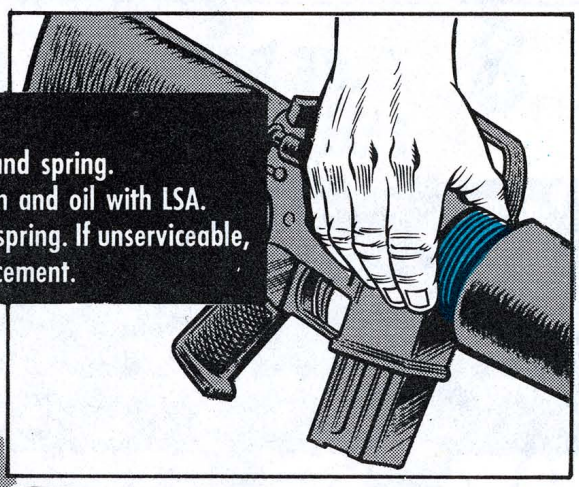

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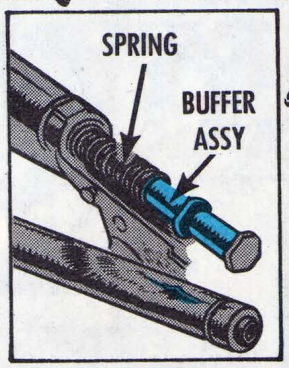
P.S MORE

6. LOWER RECEIVER EXTENSION

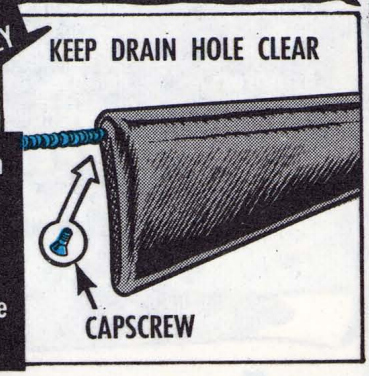
Problem: Corrosion.
Cause: Moisture.
Rifleman: Remove buffer and spring to clean and lube inside extension.
Armorer: Remove butt stock — clean hole in butt stock screw and extension — lube 'em with LSA.



7. BUTT CAP SCREW

DISASSEMBLY ARMORER ONLY

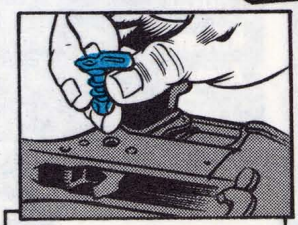
Problem: Can't remove butt stock or drain lower extension of water.
Cause: Screw rusted and drain hole mud clogged.
Rifleman: Pipe cleaner the drain open.
Armorer: Remove screw — clean it — lube it. Clear hole obstruction.



8. TAKE DOWN PIN, DETENT & SPRING SELECTOR LEVER DETENT & SPRING

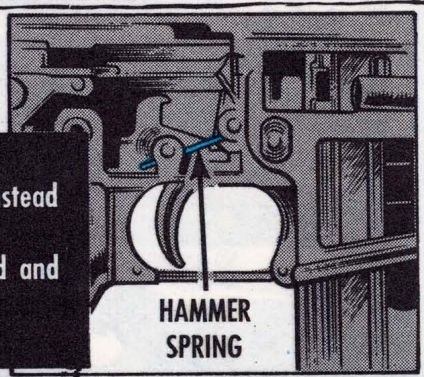
DISASSEMBLY ARMORER ONLY

Problem: Detent and springs rust frozen . . . take down pin won't hold receiver groups together. Selector won't operate or stay in place.
Cause: Rusted or corroded parts.
Rifleman: Get armorer's help if you can't lube frozen parts.
Armorer: Remove corroded parts for cleaning and lubing with LSA . . . replace parts if necessary.



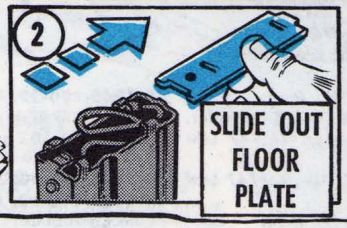
9. HAMMER SPRING

Problem: Trigger won't work.
Cause: Hammer spring assembled wrong (**under** instead of **over** trigger pin).
Rifleman: Be sure lower receiver parts clean, lubricated and put together right.
Armorer: Ask DS to reassemble correctly.



10. MAGAZINE

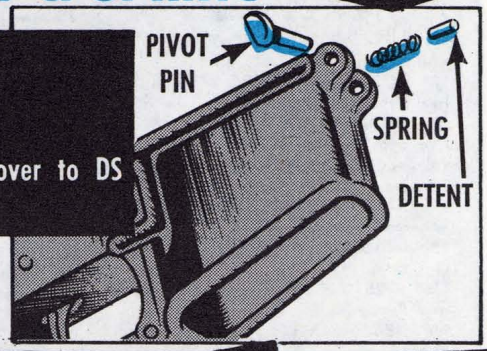
Problem: Won't feed.
Cause: Magazine dented. Spring damaged — dirty — rusted.
Rifleman: Clean and lube mag and spring. Ask armorer for new issue if damaged.
Armorer: Issue replacement.



11. PIVOT PIN, DETENT & SPRING

DISASSEMBLY ARMORER ONLY

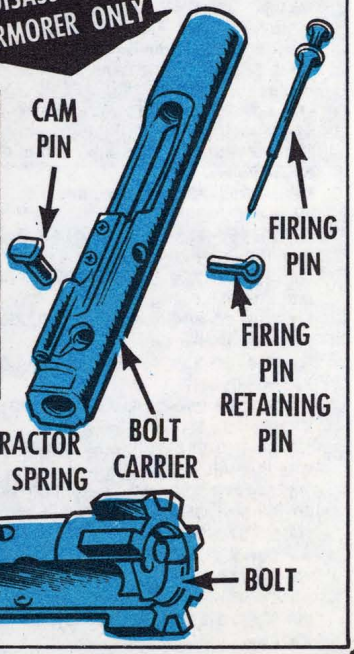
Problem: Pin loose — won't hold.
Cause: Detent and spring rust frozen.
Rifleman: LSA the receiver lube hole and pin.
Armorer: Remove — clean — lube parts. Turn over to DS if they won't come out.



12. BOLT CARRIER GROUP

DISASSEMBLY ARMORER ONLY

Problem: Carrier key and gas tube out of line or extractor damaged. Bolt binds or won't extract cartridge.
Cause: Damaged key, broken extractor or bent gas tube.
Rifleman: Handle carefully when cleaning . . . clean and lube extractor and spring.
Armorer: Check alinement and condition of extractor spring and gas tube. Replace bad spring. Bent tube rates a turn-in to DS.



PS END

This is a selected list of recent pubs of interest to organizational maintenance personnel. This list is compiled from recent AG Distribution Centers Bulletins. For complete details see DA Pam 310-4 (Jun 69), and Ch 5 (Apr 70), TM's, TB's, etc.; DA Pam 310-6 (Jul 69), and Ch 3 (Apr 70), SC's and SM's; DA Pam 310-7 (Mar 70), MWO's and DA Pam 310-9 (May 69), COMSEC Pubs.

TECHNICAL MANUALS

TM 3-4240-258-14 C4, Apr, M17A1 CBR Mask.
TM 5-2330-211-25P C2, May, M172 Low Bed Semitrailer.
TM 5-2330-212-25P C1, Jun, M172 Low Bed Semitrailer.
TM 5-2410-208-20P, Apr, Med Tracked Tractors.
TM 5-2420-219-15, C2, May, Med Wheeled Tractor.
TM 5-2805-256-14, C1, Feb, 1½ HP Gas Engines
TM 5-3610-202-20P, Mar, Printing and Repro Equip.
TM 5-3655-216-15, Apr, Gas Generating Equip.
TM 5-3810-288-12, Feb, Trk Mtd 20 Ton ¾ Cu Yd Shovel Crane.
TM 5-3810-289-12, Mar, 12½ Ton Crawler Mtd Crane-Shovels.
TM 5-3820-239-20P, Apr, Earth Boring Equip.
TM 5-3825-221-20P, May, Water Distributor.
TM 5-3895-209-20P, Apr, 9-Ton GED Bitum Roller.
TM 5-3895-334-15, Apr, Bitum Heaters.
TM 5-3895-334-25P, Apr, 165 Gal Cap Bitum Heaters.
TM 5-4110-209-15, Apr, 5,000 BTU Mech Panel Refrig Unit.
TM 5-4120-204-20P, May, 60,000 BTU 400 Hz Air Cond.
TM 5-4120-259-15 C2, Jun, 36,000 BTU Air Cond.
TM 5-4120-296-23P, Apr, 18,000 BTU Flr Mtg Elec Air Cond.
TM 5-4120-298-23P, May, 18,000 BTU Elec Air Cond.
TM 5-4210-216-25P, Apr, 500 GPM Trailer Mtd GED Centrif Fire Pump.
TM 5-4310-218-25P C1, Jun, 15 CFM Air Comp.
TM 5-4310-250-15 C4, Mar, 250 CFM Air Comp.
TM 5-4310-270-25P C1, May, 60 CFM Air Comp.
TM 9-2330-272-14 C5, May, M131A3C 5000 Gal Tank Semitrailer.
TM 9-2330-294-14, Apr, XM747 Low Bed Semitrailer.
TM 9-2330-294-24P, Apr, XM747 Low Bed Semitrailer.
TM 9-2350-208-ESC C1, May, M48A2C 90-MM Gun Tank.
TM 9-4933-209-14 C1, Mar, XM163 20-MM SP AAA Gun.
TM 9-4933-209-14 C1, Mar, XM167 20-MM Towed AAA Gun.
TM 9-4935-306-25P/2/1, Apr, Sergeant.
TM 9-7218 C12, May, M42 M42A1 Twin 40-MM SP AAA Gun.
TM 55-1740-200-14, May, All Fixed and Rotor Wing.
TM 55-1930-206-20P, May, LARC-XV.
TM 55-2840-233-20P, May, OV-1.

LUBRICATION ORDERS

LO 3-4230-209-12, Mar, M12A1, 500 Gal Decon App.
LO 5-1450-202-12, Apr, Pershing.
LO 5-2410-227-12, Mar, Case M450 Tracked Tractors.
LO 5-3810-287-12-2, Feb, 12½ Ton Crawler Crane-Shovels.
LO 5-3810-288-12-6, Feb, 6x6 GED ¾ Cu Yd 20 Ton Trk Mtd Crane-Shovel.
LO 5-3895-271-12-1 and 12-2, Mar, Bitum Roller Pavers.
LO 5-3895-329-12-1 and 12-2, Apr. Graders.
LO 5-4310-338-12-1 and 12-2, Apr, 600 CFM Cat D333C eng Air Comp.
LO 5-6115-574-12, Mar, 100 KW 60 Cyc DED Gen Set.
LO 9-2320-260-12, Feb, M39 (M809 Series) 5-Ton Truck.
LO 9-1430-502-12, Jan, Hawk.
LO 10-3610-228-12, Feb, Printing & Repro.
LO 10-3930-615-12, Mar, 4000 Lb Elec Forklift Truck.

MODIFICATION WORK ORDERS

5-5420-200-30/2, May, M48A2 (AVL) Bridge Launcher.
5-5420-202-30/1, May, M60A1 (AVL) Bridge Launcher.
9-1010-200-30/2, Jun, M42/M42A1 (Twin) 40-MM SP Gun.
9-1055-205-30/19, Jun, Honest John.
9-1220-203-50/10, May, M13A2 and M13B1C Ballistics Computer.
9-1240-200-30/4, Jun, M113 M115 and M117 Panoramic Telescope.
9-1240-200-30/4, Jun, M107 175-MM SP Gun and 8 Inch M110 105-MM M102 and M108 and 155-MM M109 Howitzers.
9-1440-301-40/35 C2, Jun, Sergeant.
9-2300-396-20, May, M48A3 90-MM Gun Combat Tank; M60 M60A1 105-MM Gun; M728 Combat Engr Veh.
9-2350-242-40/1, Apr, M88 VTR.
9-2350-244-30/6 C2, May, M114/M114A1 Carrier.
9-2350-244-30/8, May, M114/M114A1 Carrier.
9-2350-244-50/1, May, M114/M114A1 Carrier.
9-4931-418-50, May, Adding 208 V AC 3-Ph Elec Circuit DC-LO Frequency Calibration Van.
9-4935-303-40/9 C1, Jun, Sergeant.
9-4935-306-40/2 C1, May, Sergeant.
11-5821-259-30/1, May, Mod of Radio Set AN/ARC-114 to Install Splashproof Kit, All Fixed and Rotor Wing.
11-6625-614-40/1, Jun, AN/ASM-121 Amplifier Test Set (CH-47 Hel Ground Spt Equip).
55-1500-200-20/4 C2, Jun, UH-1A-1B UH-1D.
55-1500-202-30/2 C1, Jun, UH-1A-1B UH-1D.
55-1510-204-30/9, Jun, OV-1.
55-1520-203-34/8 C2, Jun, CH-37.
55-1520-204-40/3 C1, Jun, OH-13.
55-1520-221-20/13, Jun, AH-1G.

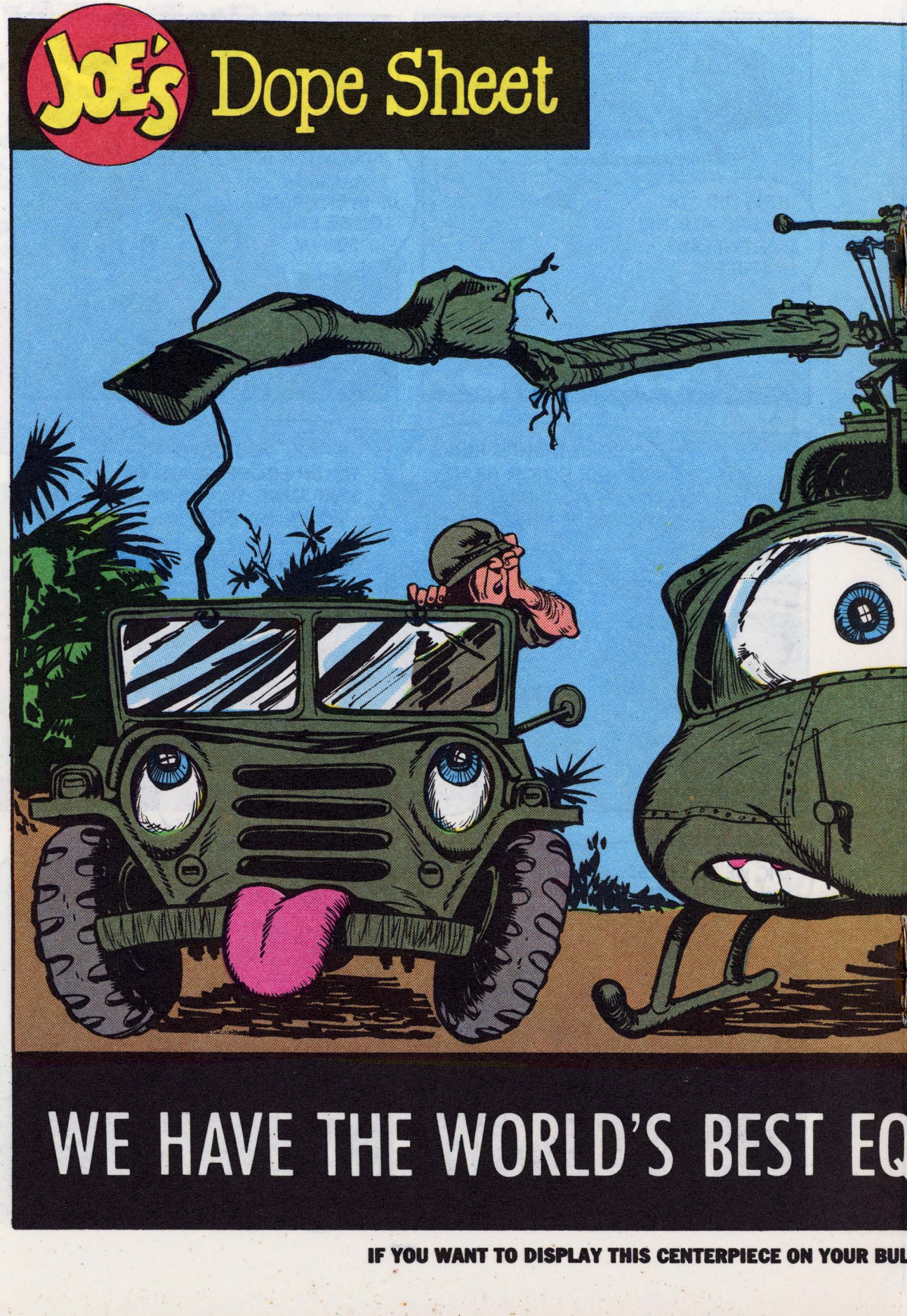
MISCELLANEOUS

ENG 7 & 8-9212 C1, May M172 and M172A1 Low Bed Semitrailer.
MIL STD 129E, Apr, Military Standard Marking for Shipment and Storage.
SB 11-625, Jun, Use of Cushioned Shipping Sacks (Jiffy Bags) for Electronic Materiel.
TB 9-1425-549-25, Apr, Hawk.
TB 55-1500-206-20/16 C2, Jun, UH-1A-1B-1C-1D AH-1G.
TB 55-1500-208-20/1, Jun, OH-23.
TB 55-1520-202-30/3, May, CH-54.
TB 55-8465-206-20/1 C1, Jun, OV-1.
TB 385-5, Mar, Crawler Tractor Safety Manual.
TB 600-1, May, Operator Licensing Engr Equip.
TB 750-236 C1, Mar, Calibration Requirements for the Maint of Army Materiel.
TB 750-248, Apr, Handling Maint Storage and Disposal of Radioactive Commodities Managed by USAMECOM.

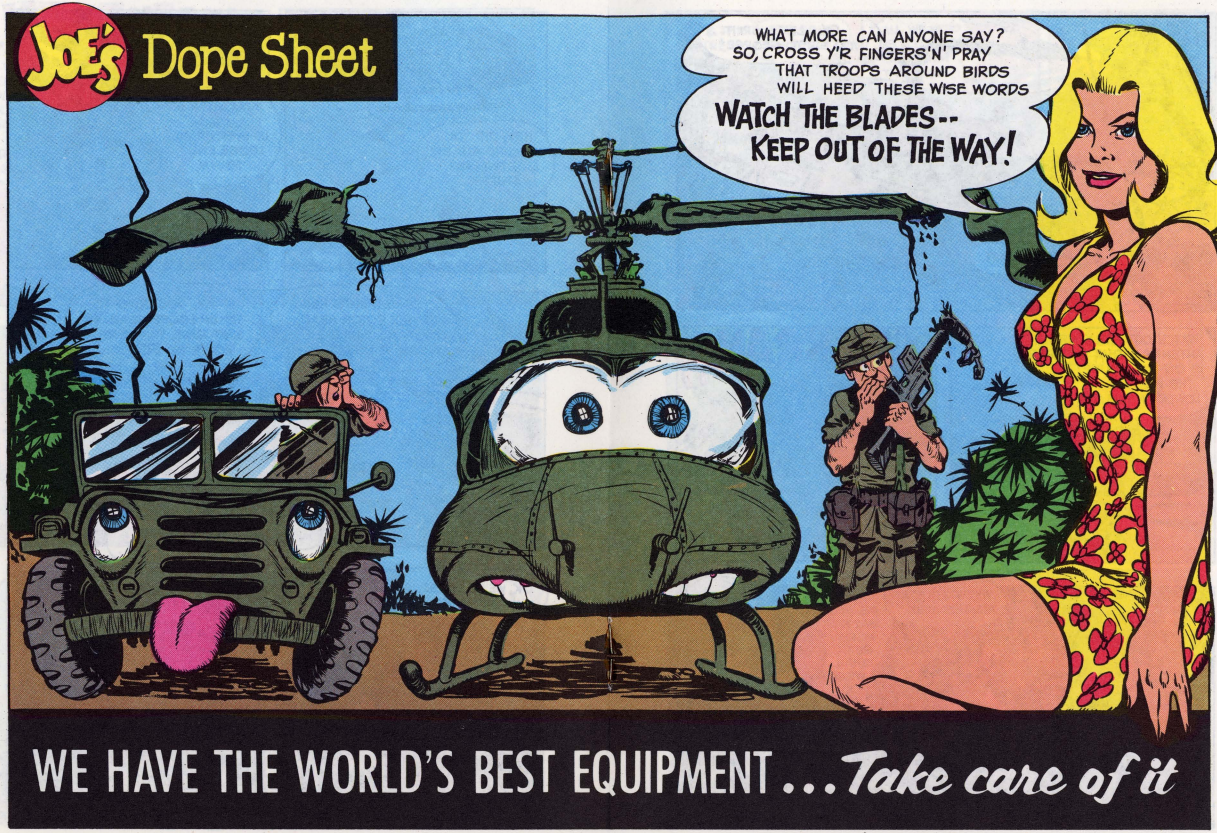
JOE'S DOPE
SOMETHING'S GOTTA GIVE!
CANDLESTICK MAKER, THIS IS BAKER. MISSION SNOOPER COMPLETE WITHOUT A SCRATCH, COULD USE A LIFT. GOT A BIRD HANDY? LOCATION, DELTA 710, FOXTROT 535, OVER.
THAT'S SNOOPER PATROL... OUT ON HILL 716 AND LOOKIN' FOR A LIFT. GOT A BIRD READY?
TELL 'EM I'M HALFWAY THERE... WANT TO COME ALONG, CONNIE?
NO, THANKS, I'LL WAIT HERE... I'M GIVING A PM CLASS IN AN HOUR...

LATER THAT DAY...
...AND WHEN IT COMES TO WHIRLING BLADES, THEY NEED AIR SPACE ...OR SOMETHING GOTTA GIVE!
HERE COMES THE CHOPPER WITH SNOOPER PATROL!
YOU GOTTA MEET THESE CATS, CONNIE... TOPS ON PM - GREAT FIGHTERS, JUST COMPLETED ONE OF THE HAIRIEST MISSIONS... NOT A SCRATCH, MAN, THEY ARE SOMETHIN' ELSE!
HEY, WHAT HAPPENED?
...IS THIS THE GREAT SNOOPER PATROL ...UNSCRATCHED ??
YOU'RE NOT GONNA BELIEVE THIS, CONNIE...
THE CHOPPER WE CALLED FOR CAME IN... LIKE, RIGHT ON TIME... WE WERE ALL PRESENT 'N' ACCOUNTED FOR...
OK, SADDLE UP... WE AIN'T HOMESTEADING THIS HUMP...

BRRRAP
HEY, DID YOU SECURE ALL THE LIGHTWEIGHT STUFF?
TOO LATE. THAT MIXMASTER'S SUCKING UP EVERYTHING LOOSE ENUF TO FLY.
CLANK CLANK CLANK CLANK
SOMETHING'S HUNG UP THE ROTOR HEAD... COVER ME WHILE I CHECK IT OUT.
THE HOSTILES THINK WE'RE STAYIN!
I TOL' YOU GUYS TO TIE UP LOOSE GEAR. WE JUST GAVE THAT BIRD A CASE OF FOD.
POW
PING
HUH?
FOREIGN OBJECT DAMAGE, JUNIOR.
OK, WE'RE LOOSE... HEY WHOSE SHIRT...
...WRAPPED AROUND THE SWASHPLATE?
OK, NOW -- LET'S MOVE IT!



IF YOU WANT TO DISPLAY THIS CENTERPIECE ON YOUR BUL

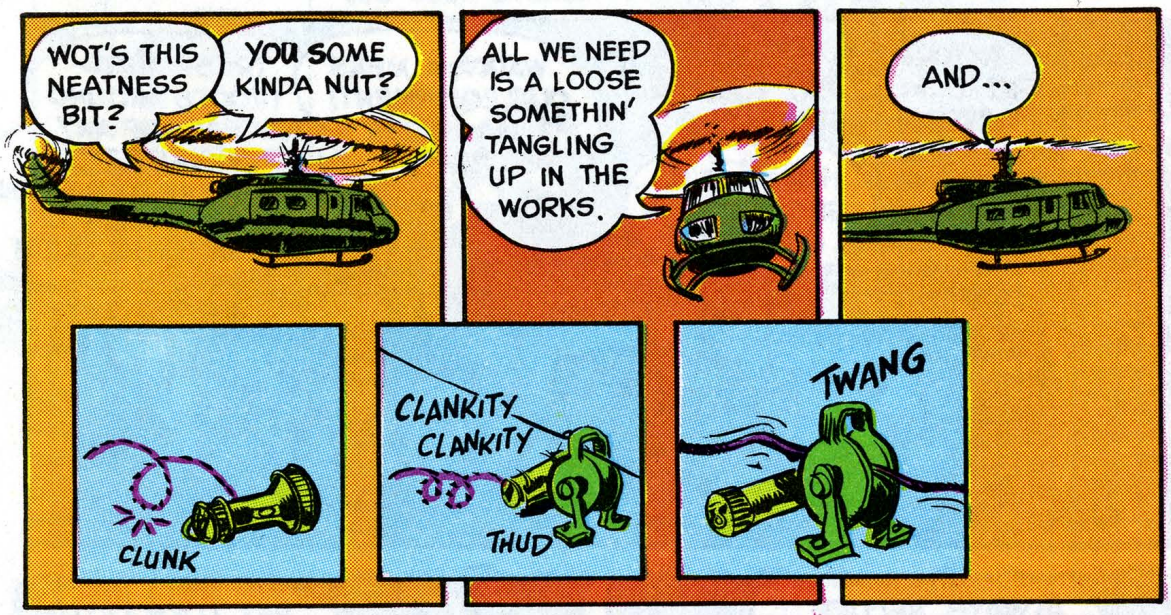


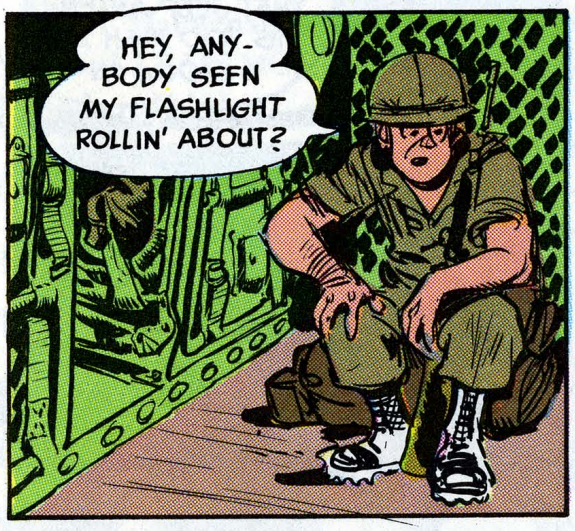
IF YOU WANT TO DISPLAY THIS CENTERPIECE ON YOUR BULLETIN BOARD, OPEN STAPLES, LIFT IT OUT AND PIN IT UP.

QUIPMENT ... *Take care of it*

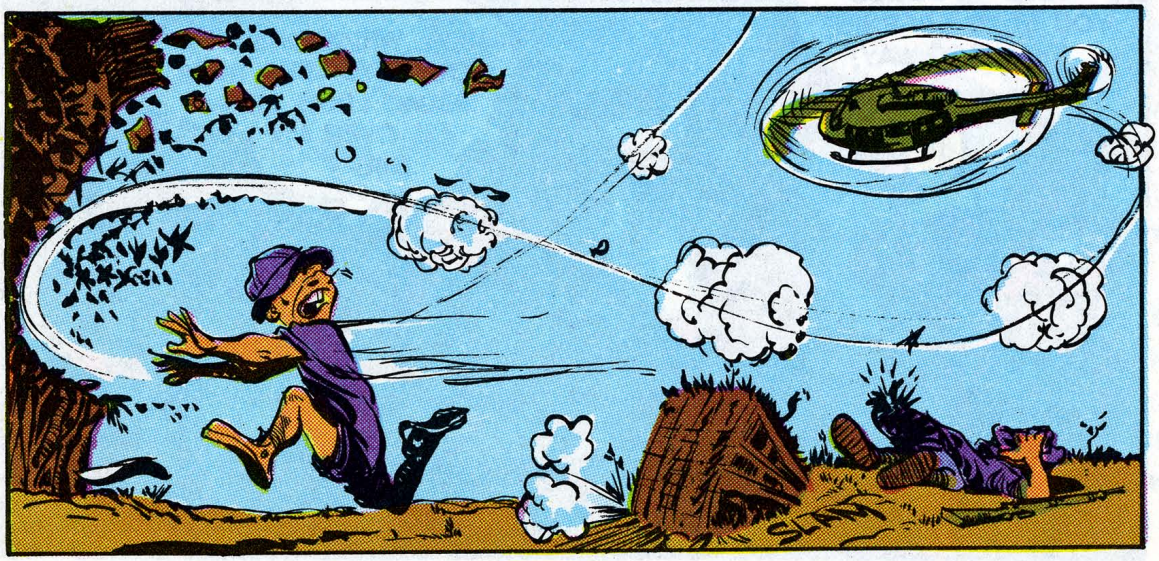
LLETIN BOARD, OPEN STAPLES, LIFT IT OUT AND PIN IT UP.

OK... LET'S SPLIT... YOU FIRST, GEORGE!
RAHT.
WATCH OUT FOR YOUR ANTENNA -- THAT CHOPPER IS ON AN INCLINE! THE BLADE'S LOWER ON THIS SIDE.
GRRRRANCH
?!
WHEW! LOOK AT ALL THIS JUNK.
SEEMS TO ME WE BRING BACK MORE GEAR THAN WE GO OUT WITH.
TIDY UP IN HERE. WE GOT ENOUGH TROUBLE WITHOUT THIS.


WOT'S THIS NEATNESS BIT?
YOU SOME KINDA NUT?
ALL WE NEED IS A LOOSE SOMETHIN' TANGLING UP IN THE WORKS.
AND...
CLUNK
CLANKITY CLANKITY
THUD
TWANG


HEY, ANY-BODY SEEN MY FLASHLIGHT ROLLIN' ABOUT?

UH,OH,THE COLLECTIVE'S BINDING.


SLAM

WELL, WE AUTOROTATED TO A RICE PADDY BUT LUCKED OUT... 'CAUSE A PASSING JEEP GAVE US A LIFT.
HOP IN... I'LL GET YOU TO A CHOPPER.
WADDAYA MEAN OUR EQUIPMENT! IT WAS YOUR AIRCRAFT!!
TRUE... BUT TROOPS AROUND AIRCRAFT OF ANY KIND SHOULD REALIZE THAT LOOSE ITEMS CAN GET SUCKED UP INTO VITAL PARTS.
ALWAYS SECURE YOUR GEAR.
BRRAP
HEY LOOK OUT! THAT JEEP ANTENNA IS TOO HIGH AND... OOOOOH
WELL – I GUESS YOU GUYS LEARNED THE HARD WAY!
HEY...WHICH ONE OF YOU GUYS LEFT THEM AMMO LINKS LAYING ALL OVER MY BIRD?

The Army Maintenance Management System is a 2-way street. Keep accurate info flowing from aircraft log book forms to the head shed, and you'll get accurate info back . . . when you need it.

The U.S. Army Aviation Systems Command now has The Aircraft Life Cycle Maintenance and Ownership Record (TALCMOR) for each serial-numbered bird.

This historical record of maintenance actions lets the engineer-types study improved procedures—means less maintenance sweat . . . and more.

Should you need to reconstruct info when a log book is lost or missing, contact your support units first-off. If you don't make out locally just take the new TALCMOR route.

Contact: Commanding General, U.S. Army Aviation Systems Command, ATTN: AMSAV-R-EC, P.O. Box 209, St. Louis, Mo. 63166.

Give the reason for the request, bird FSN, type, model, series and serial number. Include the date required and your return address.

That'll keep your records up to snuff.

Some flight sunglasses, FSN 8465-753-6261, have cropped up with unflared screws that'll come loose at the frames and temples.

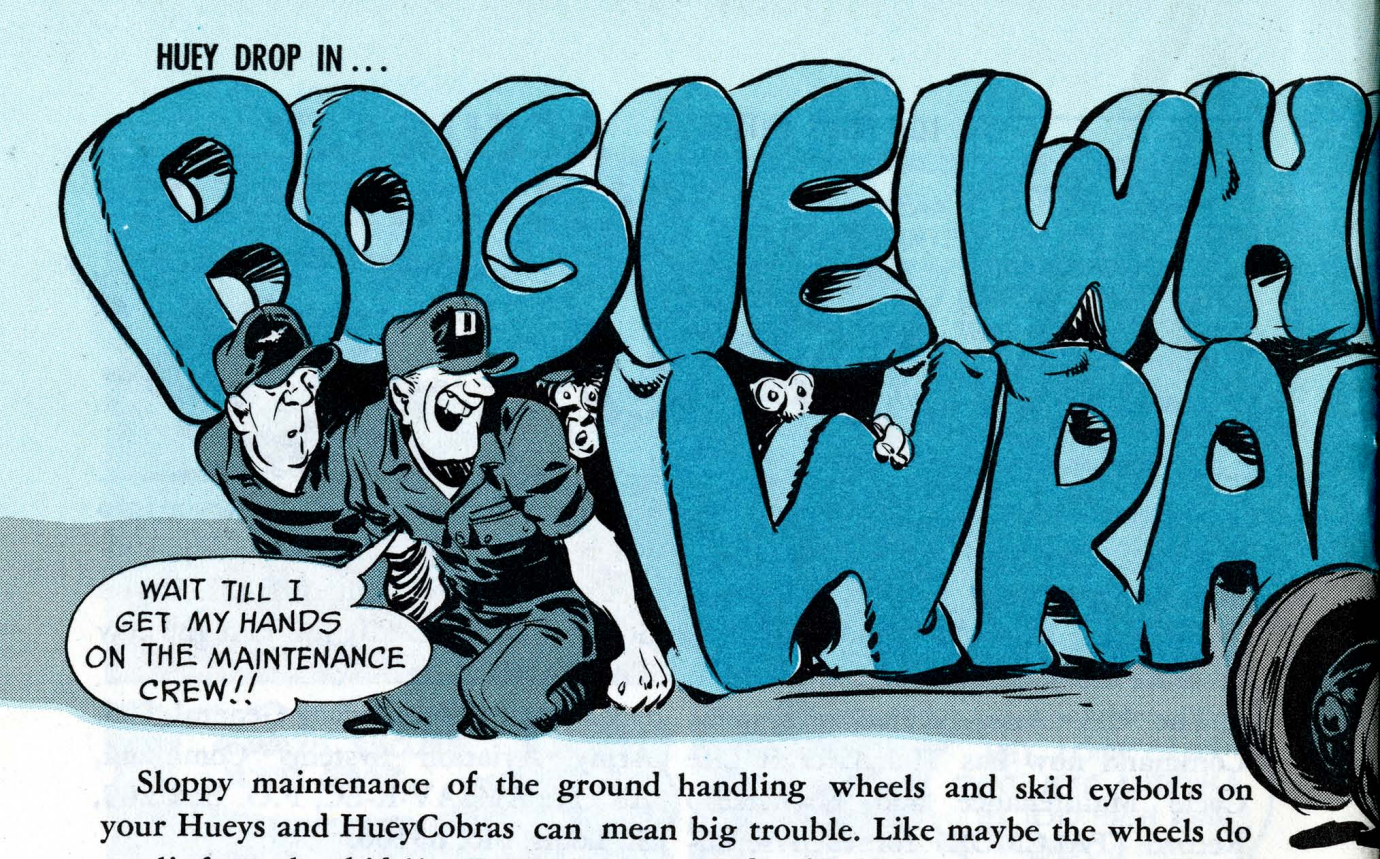
Eyeball yours. Move the temples up and down. If the screws work loose, they're the unflared type.

If you have an optical shop close by, they can use a clinching tool to tighten those screws. But, if you don't have that service close, use a drop of shellac or clear fingernail polish on the screw to keep it from backing out.

If you've already lost the screw, run a thin wire through the hole where the screw should be and crimp it. That'll hold the temples until you can get the glasses repaired.

HUEY DROP IN...

BOGIE WHEEL WRAP

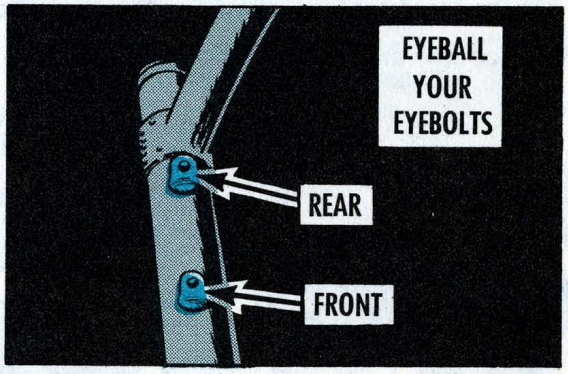


Sloppy maintenance of the ground handling wheels and skid eyebolts on your Hueys and HueyCobras can mean big trouble. Like maybe the wheels do a split from the skids!! Ever see a commander blow his cool because of pre-flight mission abort?

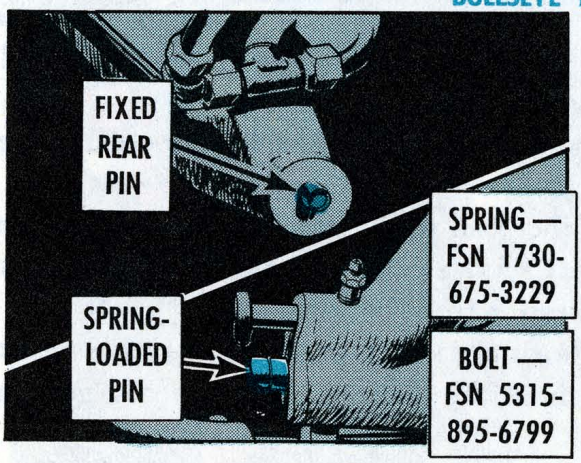
CHECK SKIDS

Do a double take on those eyebolts during your next inspection.

Pay extra attention for wear 'n' tear on the inner facings — where the wheel assembly hooks on. If eyebolts are chipped, worn, bent, cracked . . . replace 'em pronto, FSN 5306-883-4462, P/N 204-050-143-3 works at either spot, and for $6.70 it's a bargain.



BULLSEYE THE WHEELS

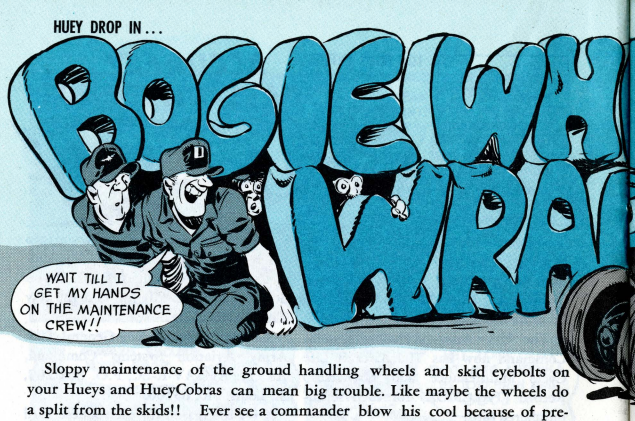


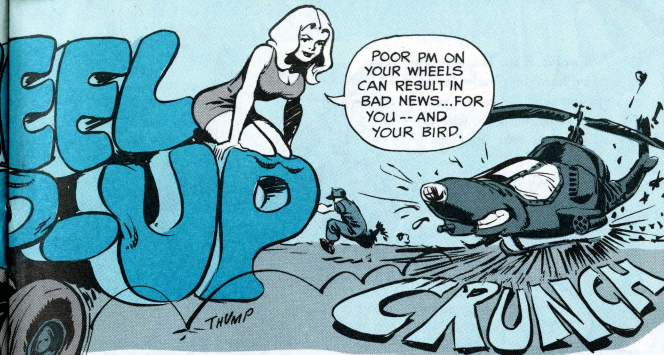
Zero-in on the wheels, wherever they may be. Check the wheel mounting pins. Be sure they're straight. More'n likely you'll find the fixed mounting pin in CONNIE RODD condition. It's that spring-loaded pin that gets a real eye-ball to eyebolt exam.

Replace either pin if it's cracked, chipped, broken, bent.

HUEY DROP IN . . .

BOGIE WHEEL WRAP-UP





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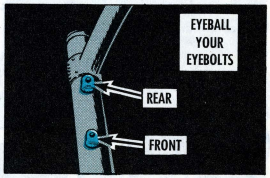
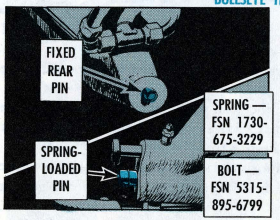


BULLSEYE THE WHEELS



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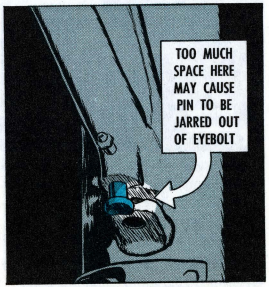
Replace either pin if it's cracked, chipped, broken, bent.

Test the front pin for grease-easy, in-out action. Crud or rust could keep it from seating good. If so, you'll have a short eyebolt insertion . . . a shorter trip on the wheels.

Never forget the spring. If it feels like it's lost some of the old zip and doesn't snap back in a hurry when it's finger-tested, change it. A set of bogie wheels has to haul more 'n one bird, and that spring gets maxi-action.

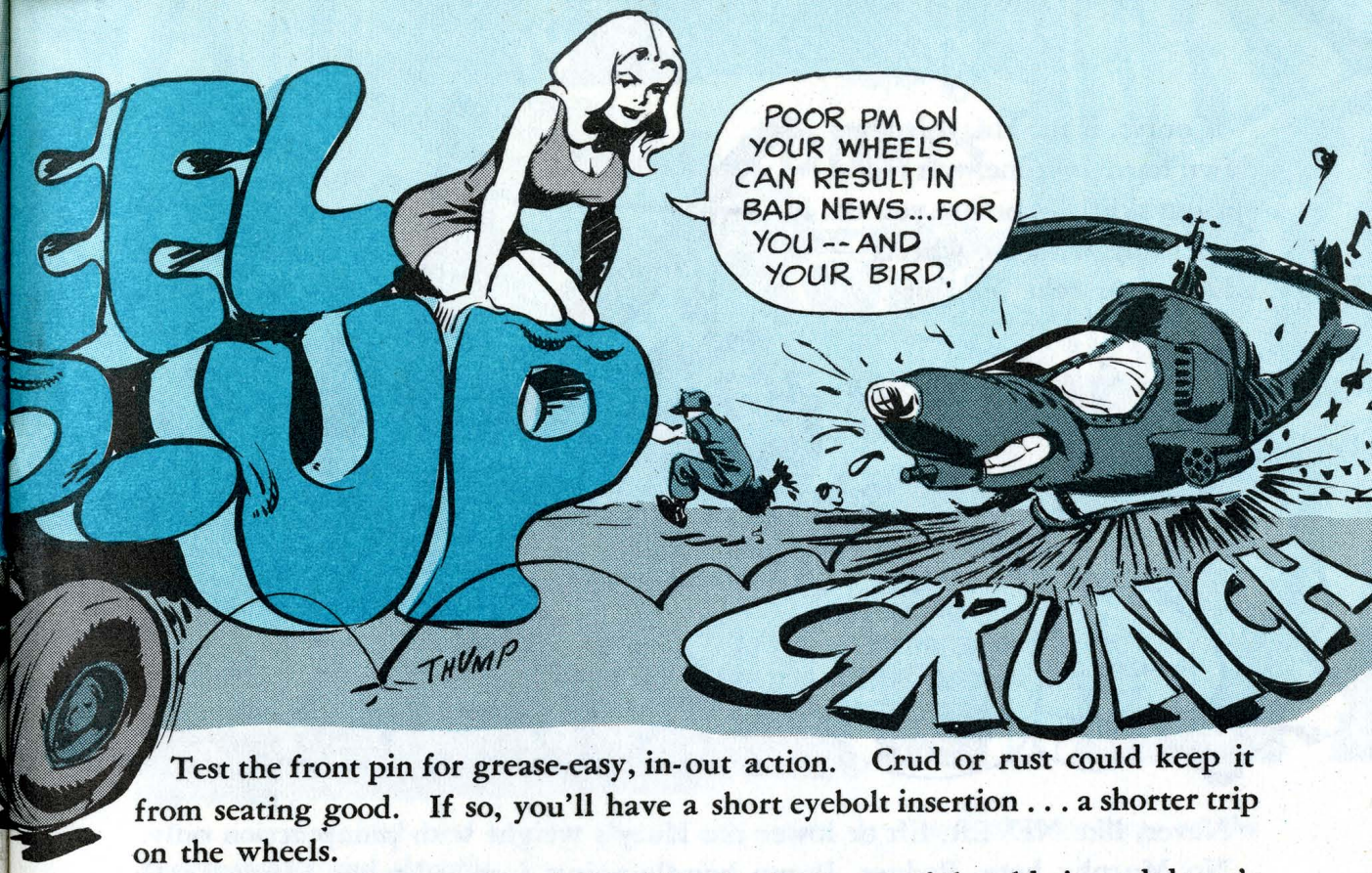
WHEELS SNUG?

When you attach the wheels, check the space between the pump cradle assembly and the forward eyebolt. They should be real close. Add washers as necessary — on front or rear pins, for t-i-g-h-t fit. Too much space here and the pin'll be jarred out of the eyebolt by a hard knock. You'll spend extra hours replacing the rivets in your Huey's busted belly.



You've got double trouble if your bird bristles with armanent subsystems. An uncalled-for hard Huey letdown . . . and you've milked the fangs of your Congkiller.

PS MORE

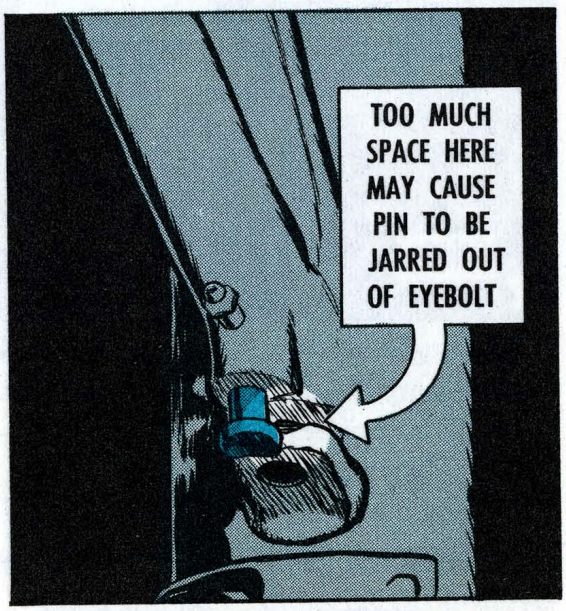


Test the front pin for grease-easy, in-out action. Crud or rust could keep it from seating good. If so, you'll have a short eyebolt insertion . . . a shorter trip on the wheels.

Never forget the spring. If it feels like it's lost some of the old zip and doesn't snap back in a hurry when it's finger-tested, change it. A set of bogie wheels has to haul more 'n one bird, and that spring gets maxi-action.

WHEELS SNUG?

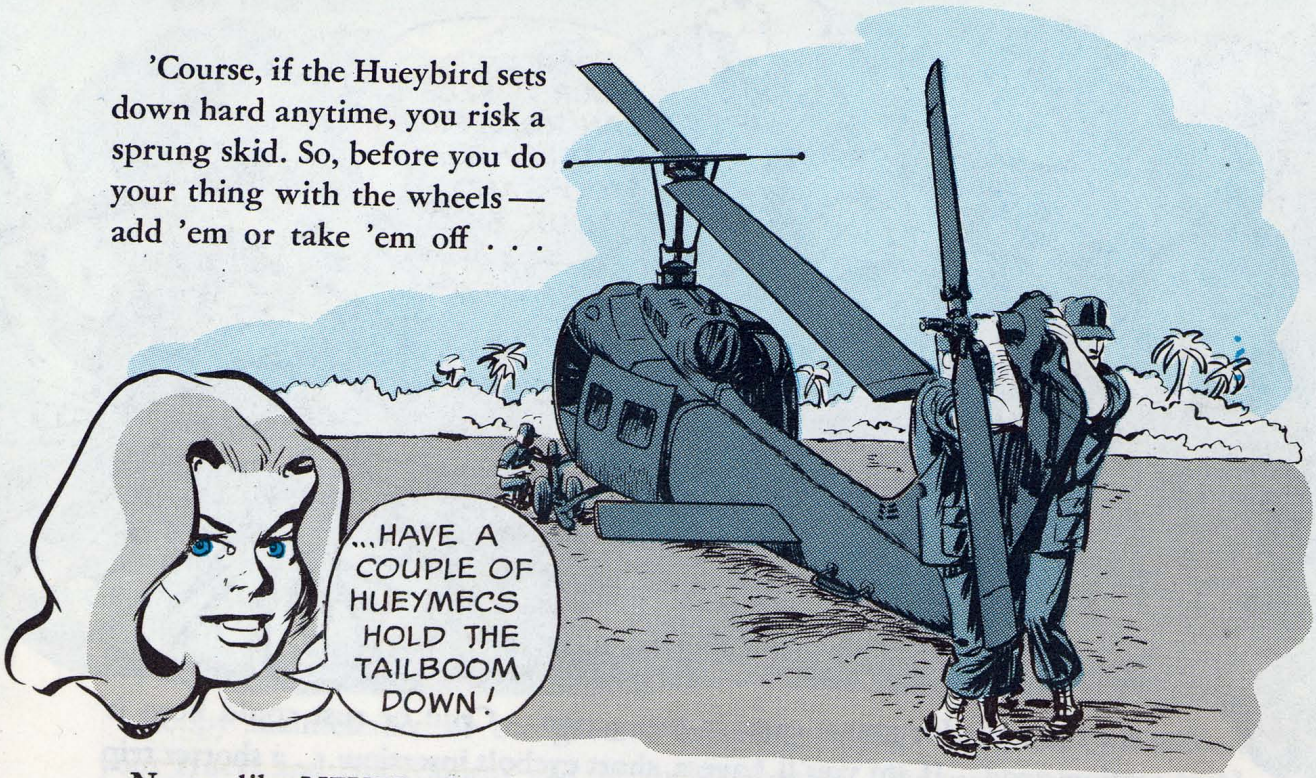
When you attach the wheels, check the space between the pump cradle assembly and the forward eyebolt. They should be real close. Add washers as necessary—on front or rear pins, for t-i-g-h-t fit. Too much space here and the pin'll be jarred out of the eyebolt by a hard knock. You'll spend extra hours replacing the rivets in your Huey's busted belly.



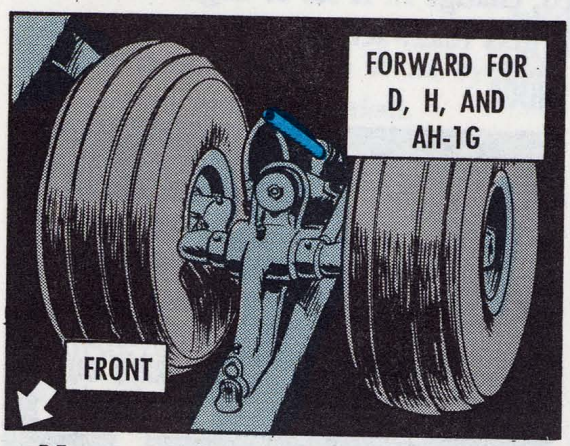
You've got double trouble if your bird bristles with armanent subsystems. An uncalled-for hard Huey letdown . . . and you've milked the fangs of your Congkiller.

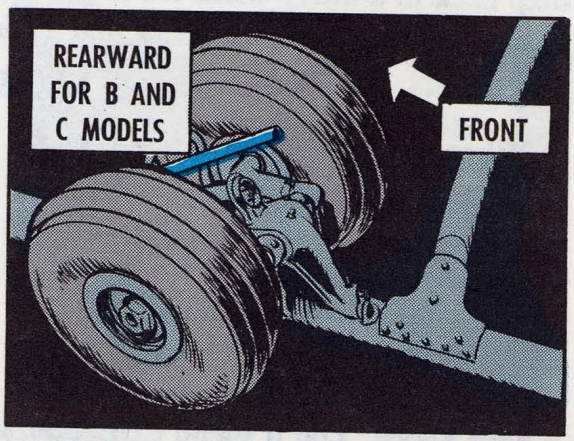
P.S MORE

'Course, if the Hueybird sets down hard anytime, you risk a sprung skid. So, before you do your thing with the wheels — add 'em or take 'em off . . .



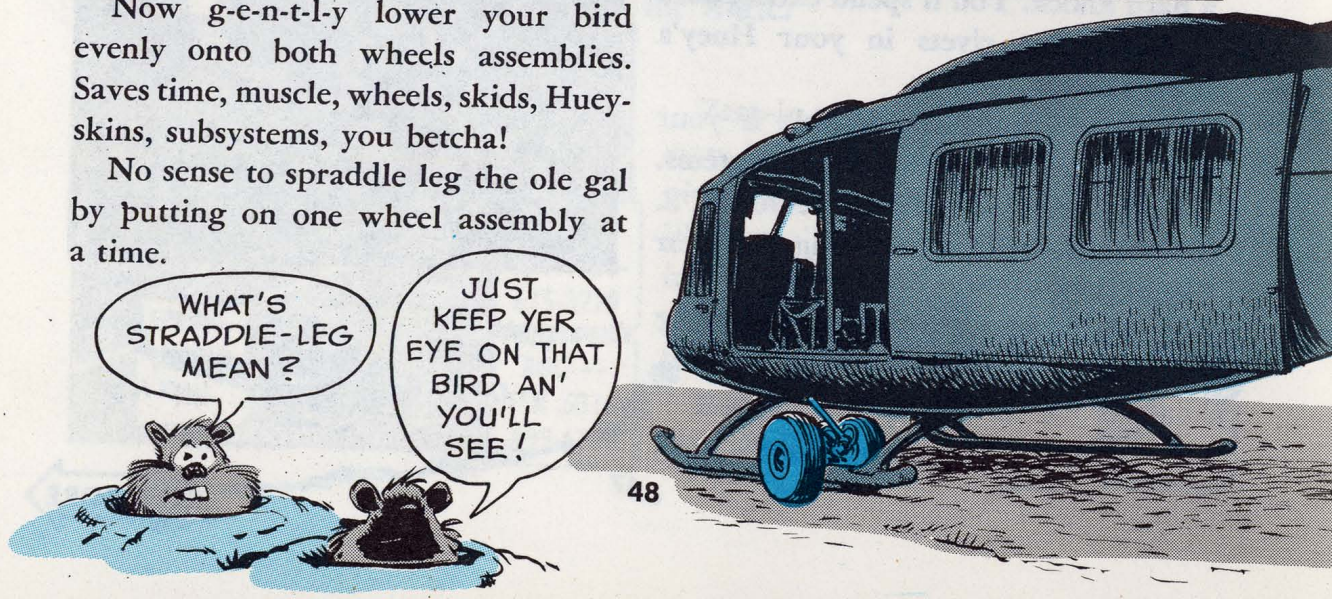
Never, like NEVER, lift or lower the Huey's weight with pump action only. No Murphy here, Podner. Pump handle points forward when lifting D, H and AH-1G models; aft for B, C birds.





Now g-e-n-t-l-y lower your bird evenly onto both wheels assemblies. Saves time, muscle, wheels, skids, Hueyskins, subsystems, you betcha!

No sense to spraddle leg the ole gal by putting on one wheel assembly at a time.



DRAG COUNTS

Dear Windy,

I've searched high and low for the up and down, fore and aft tolerances on the Huey synchronized elevator.

I'm running out of pubs to look into.

What are the wear limits, Windy?

SP5 S. E. E.

Dear Specialist S. E. E.,

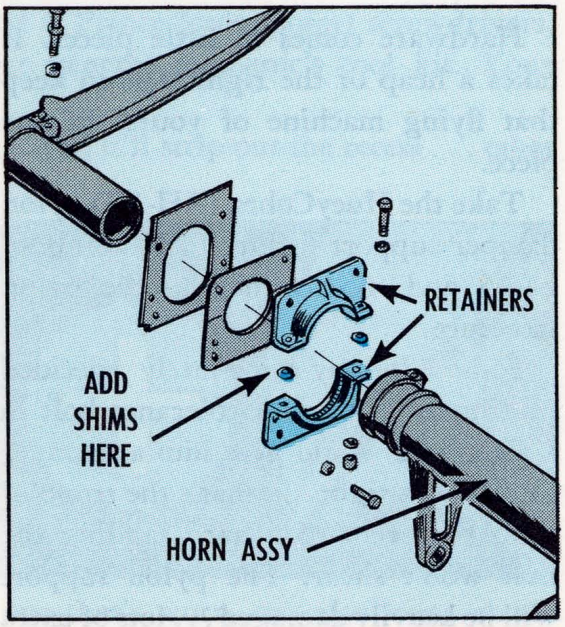
Rest your eyeballs over a brew.

The UH-1 elevator horn and spar tolerances are controlled at time of manufacture. There're no tolerances for the field. If the spar is loose check for damaged parts that would have to be replaced.

You may have a slight droop in the right-hand elevator, tho. If it's less than 1 degree, plus or minus 1/2, it's OK.

'Course you do want the proper elevator drag. To get it, attach a spring scale to the arm of the horn.

Pull the spring scale, moving the elevator from aft location to forward lock. The scale reading while pulling the elevator should range from 7-1/2 to 10-3/4 pounds. Adjust the shims to get it.

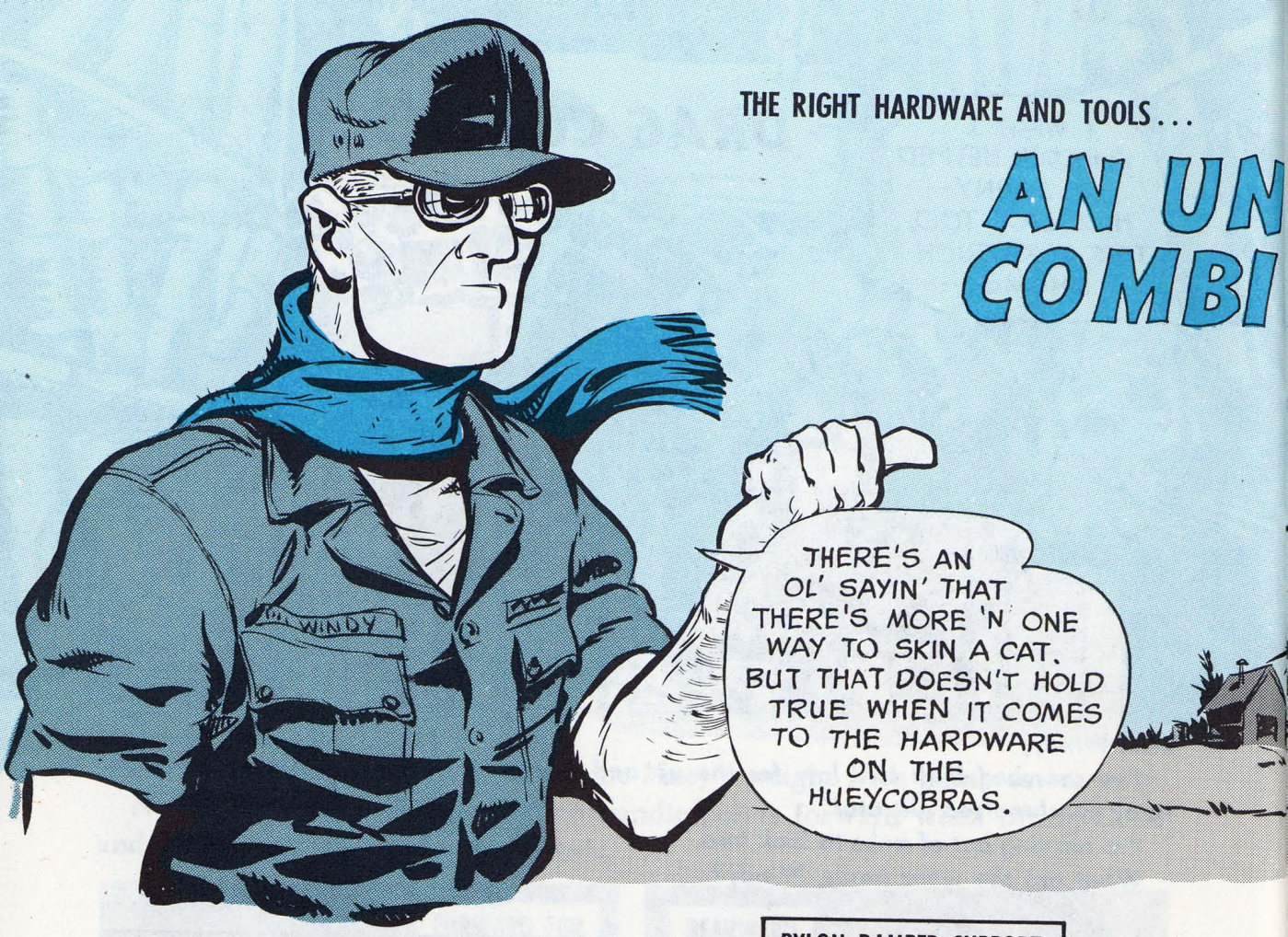


Then add more shims between the retainers, increasing the diameter of each support by 0.0015 to 0.0030 inch, to get a slight even drag on rotation of the horn without any chatter or binding.

Windy

THE RIGHT HARDWARE AND TOOLS . . .

AN UN COMBI



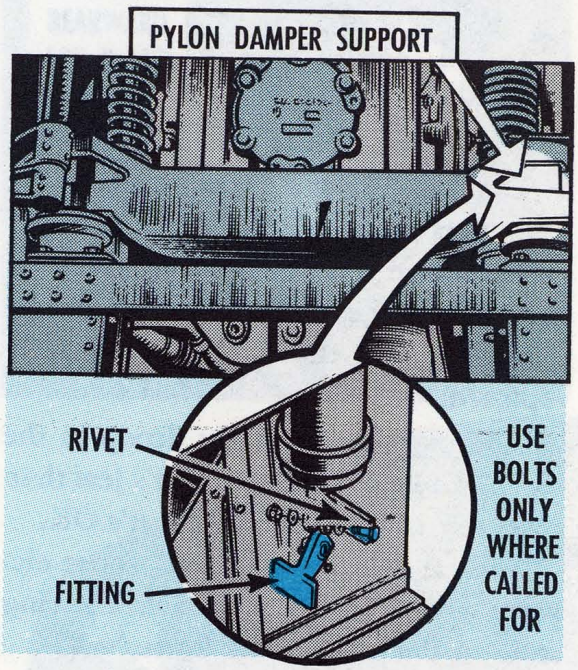
Hardware comes in little pieces. It takes a heap of the right type to keep that flying machine of yours' in one piece.

Take the HueyCobra (AH-1G) pylon damper support fitting, P/N 209-030-244-5 and -6, attached to the pylon structure.

Some Johnny-come-lately decided putting an NAS close-tolerance bolt in a rivet hole would give him a stronger fix. He was right . . . that's the trouble!

In the event of a hard landing the bolt won't shear. The pylon support will be heavily damaged . . . lots of extra maintenance sweat and elbow grease.

'Course, the engineer-types called for rivets in that fitting so that they will shear, keeping pylon support damage to a minimum.

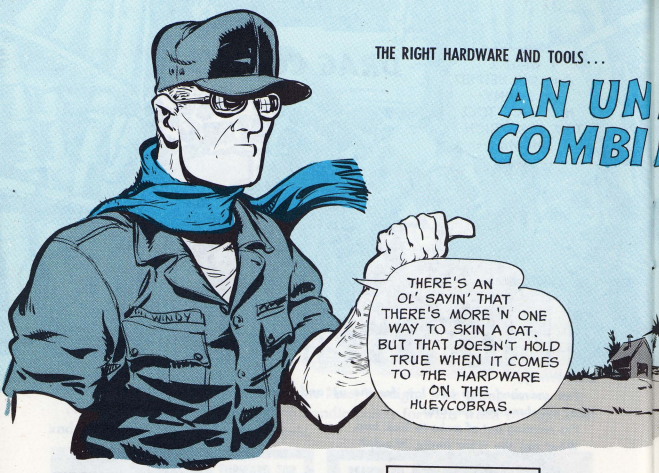


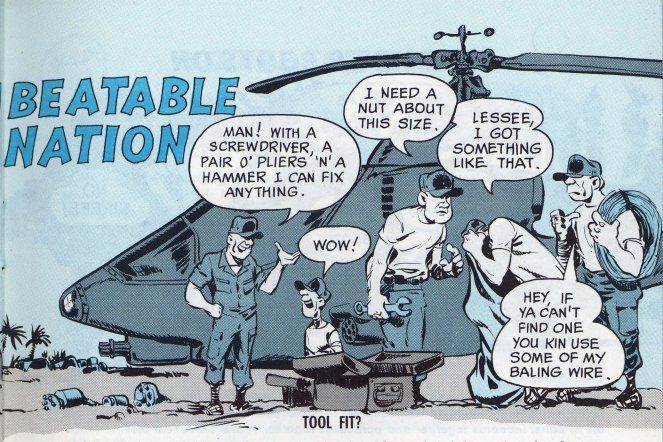
When a rivet is found sheared or loose it should be replaced with a like item, but new.

In this case use a NSA 1738B-Series rivet of the proper size and grip length.

THE RIGHT HARDWARE AND TOOLS...

AN UNBEATABLE COMBINATION





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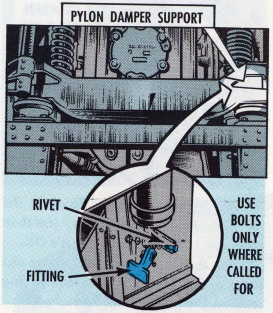

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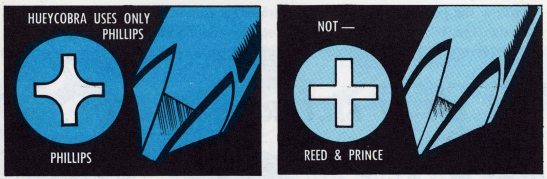
TOOL FIT?

Any mech worth his salt knows that he should use the right tool on hardware.

Sometimes, tho, it's hard to tell one tool from another.

Focus-in on Phillips (cross tip) and Reed & Prince (cross point) screwdrivers, for example. You have both types in your general mechanic's tool kit. Your HueyCobra has only Phillips screws.

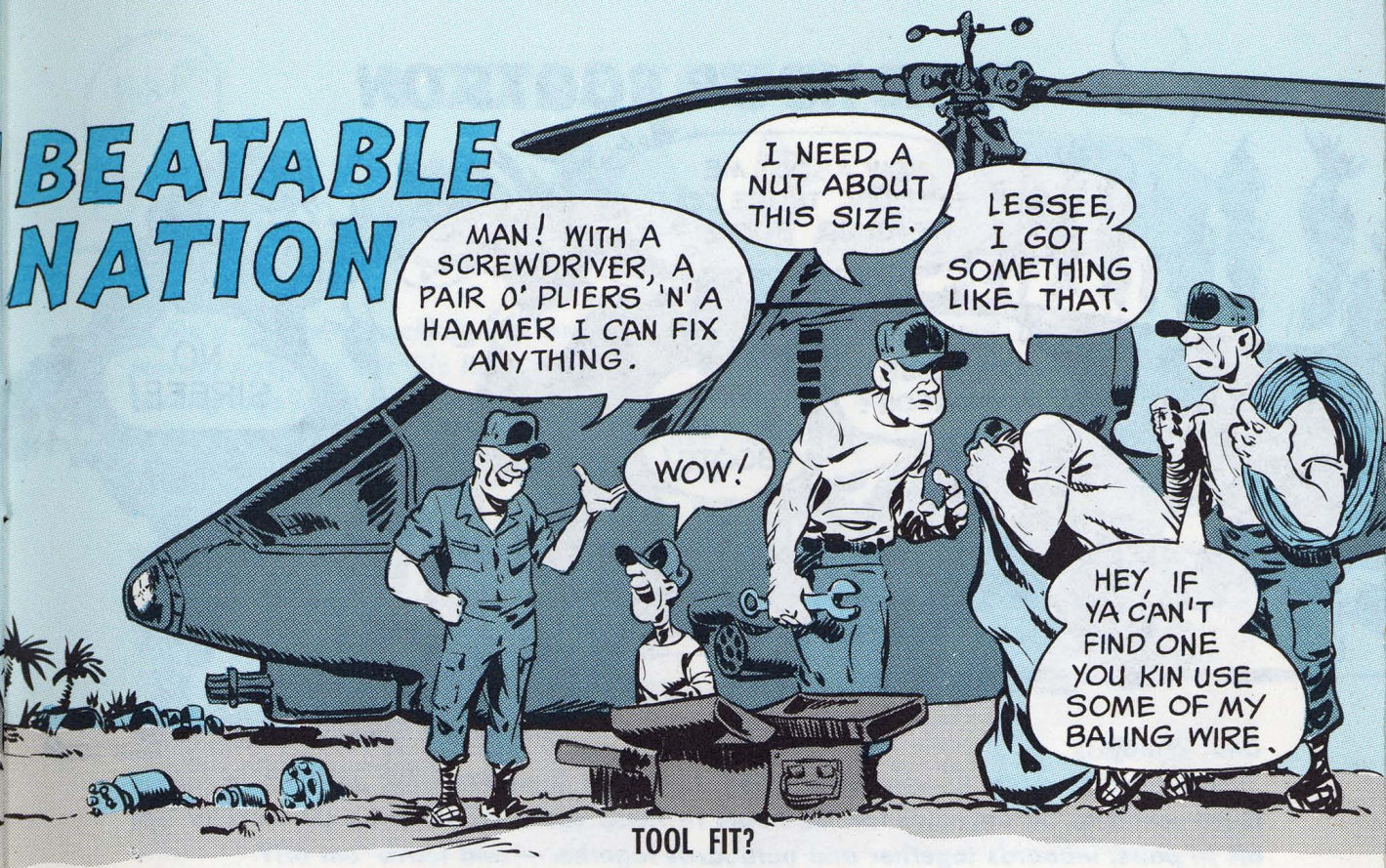
If a Reed & Prince is used in a Phillips screw, it'll strip out the recess . . . takes time to change those babies.



Using the wrong size screwdriver, or one that's worn, can also louse up the works. Use the right size and replace worn ones.

If you eye both types and can't tell the difference, look for the name stamped into the metal shank.

No name? Then, press the point into putty or a piece of soap. The imprint will clue ya.



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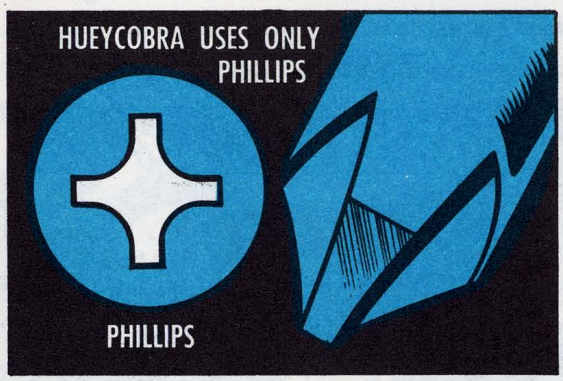

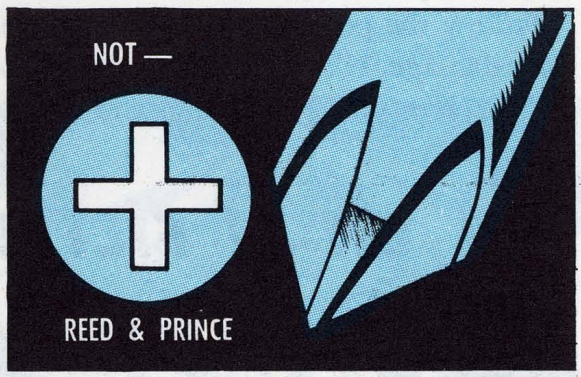

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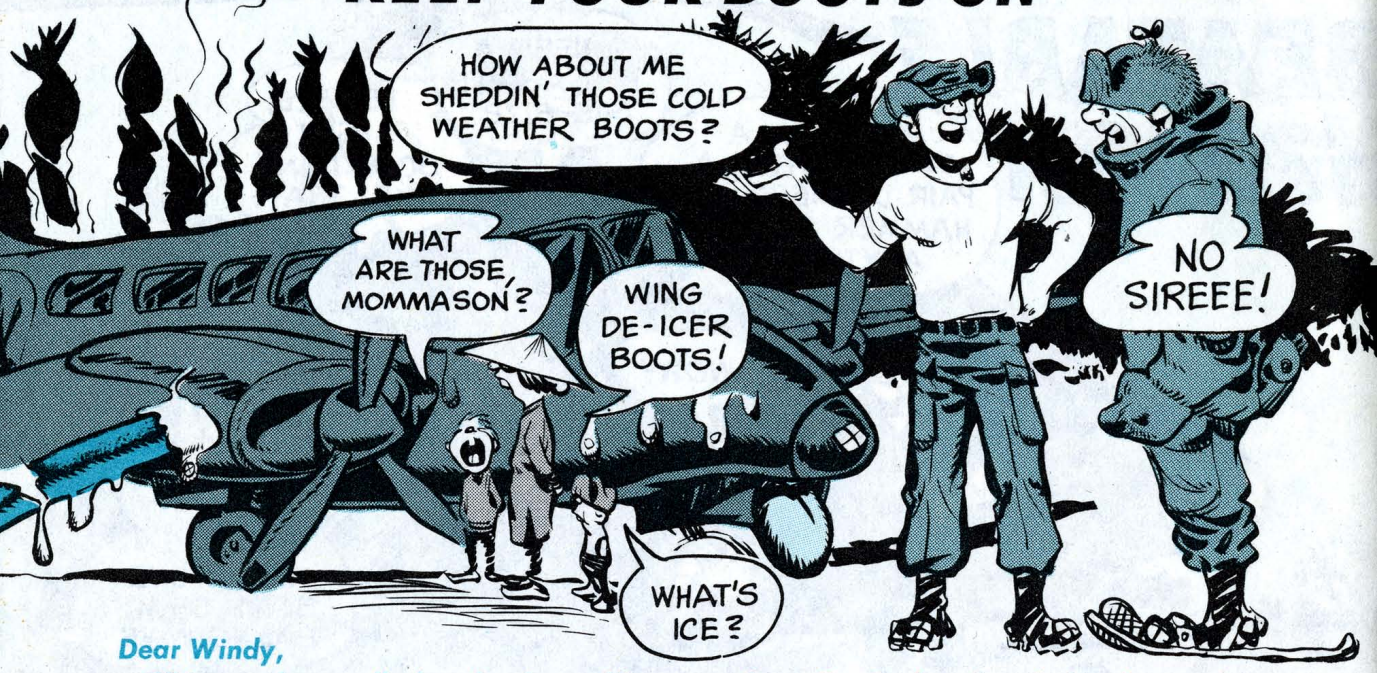
KEEP YOUR BOOTS ON



Dear Windy,

SEA weather really knocks the stuffing out of our Seminole wing de-icer boots since there seems to be little use for the boots in these parts, would it be OK to take 'em off in pairs, inboards together and outboards together—and leave 'em off?

SP6 T. I. H.

Dear Specialist T. I. H.,

No sir-e-e-e. The head shed says no deal.

If a boot wears to the point where it must be changed before you can get a replacement your commanding officer can authorize flying the bird with the pair of boots removed. That would be an interim fix until new boots were available to be put on your bird.

Follow the poop in the U-8 organizational maintenance pub to protect boots from damage. Like—never drag fuel hoses over the boots and keep your brogans off 'em. Keep the boots clean and they'll last longer.

Windy

CH-47 FILTERS CLOGGED?

Maybe you don't have the newest, improved throw-away types on your Chinook's T62 engine APU. Order 'em now: High-pressure outlet fuel filter FSN 2910-220-2075, P/N 83874 replaces FSN 2910-919-0178, and low-pressure inlet filter FSN 2910-179-6990, P/N 50179-1 replaces FSN 2835-963-1238.

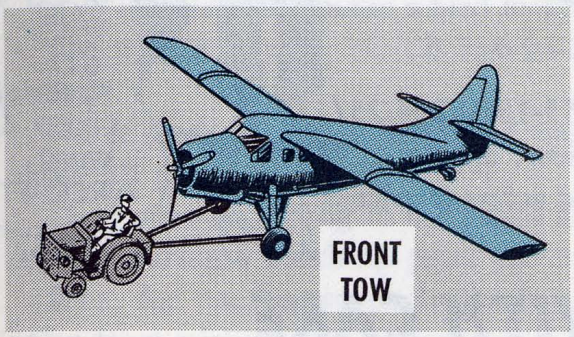
YOU'RE TOW RIGHT!

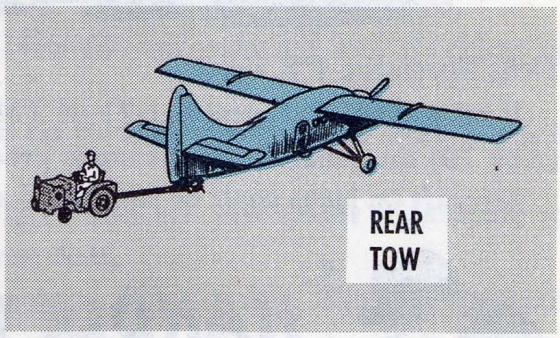
Dear Windy,

Me'n another knucklebuster are real uptight about the correct forward/rearward towing poop for our Ole Reliable (U-1A). I say a towbar-tug combo on the main gear towing lugs is OK for the push-pull deal.

My friend says not so . . . you have to use the tail wheel towing point when moving the Otter rearward. Who's gotta back down?

SP5 K. F.





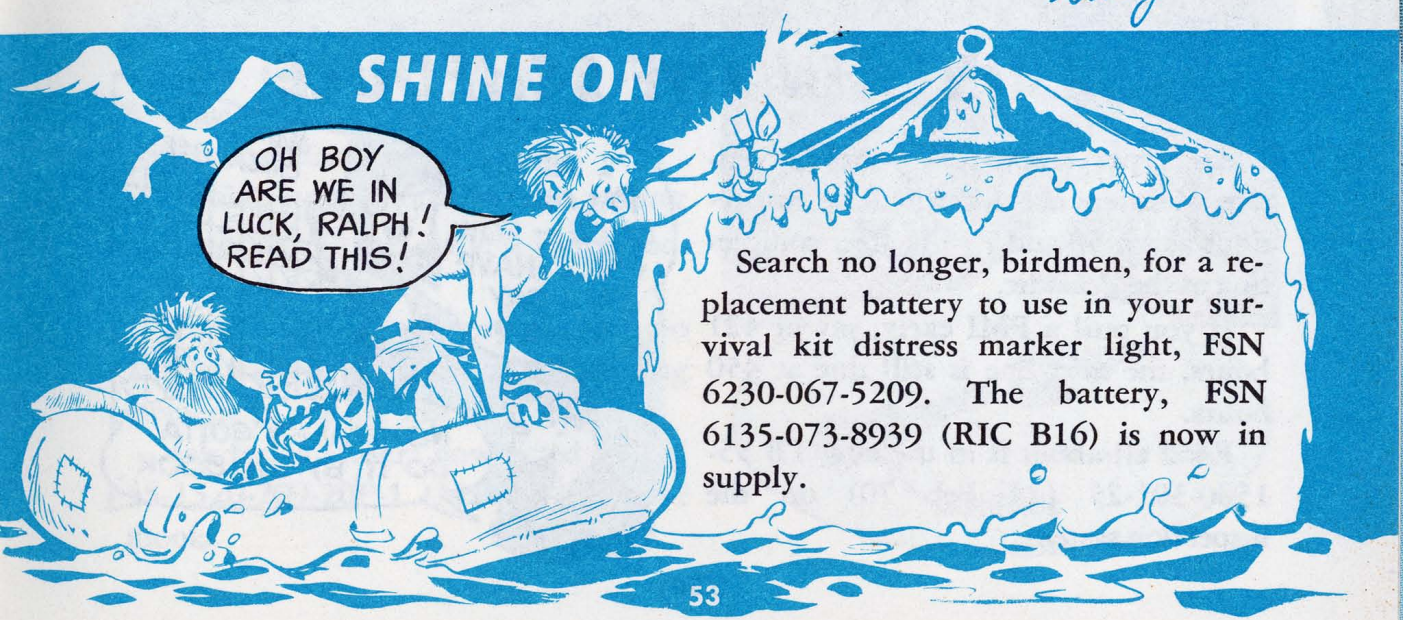
Dear Specialist K. F.,

You're right with the program, Sarge. But here're a couple of cautions about towing. Before you go with the tow, make sure the power steering switch is OFF. Now the tail wheel is a 360° free-wheeling deal.

Keep in mind, too, that you lose a bit of positive control when you **push** any stiff-wing Armybird. So-o-o-o, if you've got to move one more'n mini-distance, it's a good idea to **tow** it—forward or backward—using the main towing lugs or tail wheel fork.

Windy

SHINE ON



Search no longer, birdmen, for a replacement battery to use in your survival kit distress marker light, FSN 6230-067-5209. The battery, FSN 6135-073-8939 (RIC B16) is now in supply.

Dear Windy,

What's the deal about posting signs for aircraft on jacks?

Huey and other rotary wing pubs recommend roping off the bird and posting signs saying, "Warning, Aircraft on Jacks."

SP6 J. B. G.

Dear Specialist J. B. G.,

It sure does. Paragraph 1-71 of TM 55-1500-204-25/1 (Apr 70) on general maintenance practices, applies.

Aircraft on jacks shall be so labeled and access restricted.

Windy

HANDLE WITH CARE

Recoverable aircraft bearings can't be reclaimed if they're not handled with kid gloves and preserved for shipment. Prevent bearing contamination by following the poop in TB 750-992-2, Ch 1 (1 Jul 69) backed up by TM 55-1500-322-25, on antifriction bearings.

MAINTAIN THE SCHEDULE

Air types—schedule your Preventive Maintenance Intermediate inspections at 25, 50 and 75-hrs after completion of the Periodic.

If you pull a PMI early, say at 421 hours, the next one is still due at 450 hours.

Read all about it in the new TB 55-1500-301-25 (24 Feb 70) on the inspection system.

Spit 'n' polish will make a bird look sharp. But it's not recommended.

The word's in para 14, TB 746-93-2 (Jun 67) on painting and marking of aircraft.

Never use light oils, polishes and waxes on lusterless painted surfaces . . . just about all exteriors.

Those materials cling to the metal surfaces and are just about impossible to remove during a touch-up paint job in the field.

Wax, for one, is especially hard to remove. Even a thin film will prevent paint from sticking to a surface.

Wash or dry-clean your baby—including rotor blades—according to the maintenance pubs and she'll stay fit for flight. No cosmetics or war paint needed!

SAVE THE INSERTS!

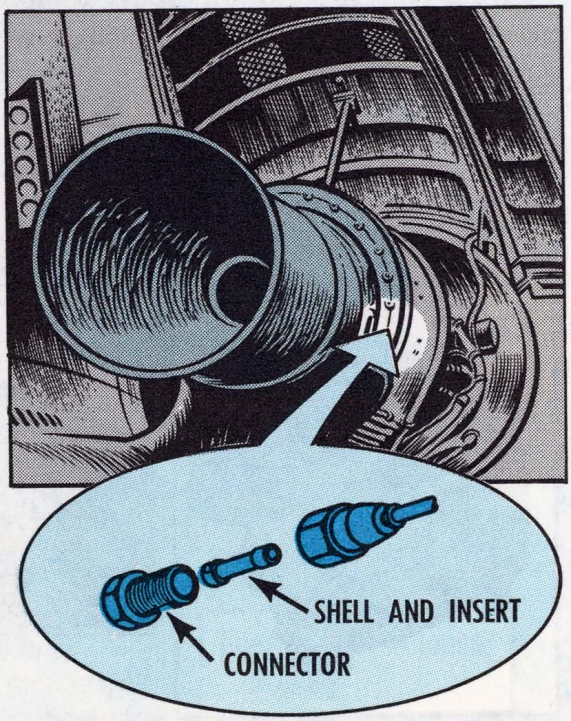
When you Chinook (CH-47) types disconnect the engine fire detection system for testing, or remove it for an engine change, focus in on the bulkhead connectors.

Make sure shell and insert, P/N 35491-0, FSN 1680-120-0560, stays with each connector.

To help keep the insert from falling out and getting lost, tape it to the connector.

If the insert doesn't stay put, you no longer have to order the whole sensing element to get the insert.

Ask for the insert now listed in TM 55-1520-209-20P-1 (Mar 70) and save moola.



Sure your SPH-4 pilot's protective helmet is a darned good one, but it takes maintenance and common sense to keep it that way.

That helmet comes in 2 sizes so get one that fits. The regular size, FSN 8415-144-4981, will fit head sizes up to 7-1/4, and the extra large size, FSN 8415-144-4985, will fit head sizes 7-1/4 and up.

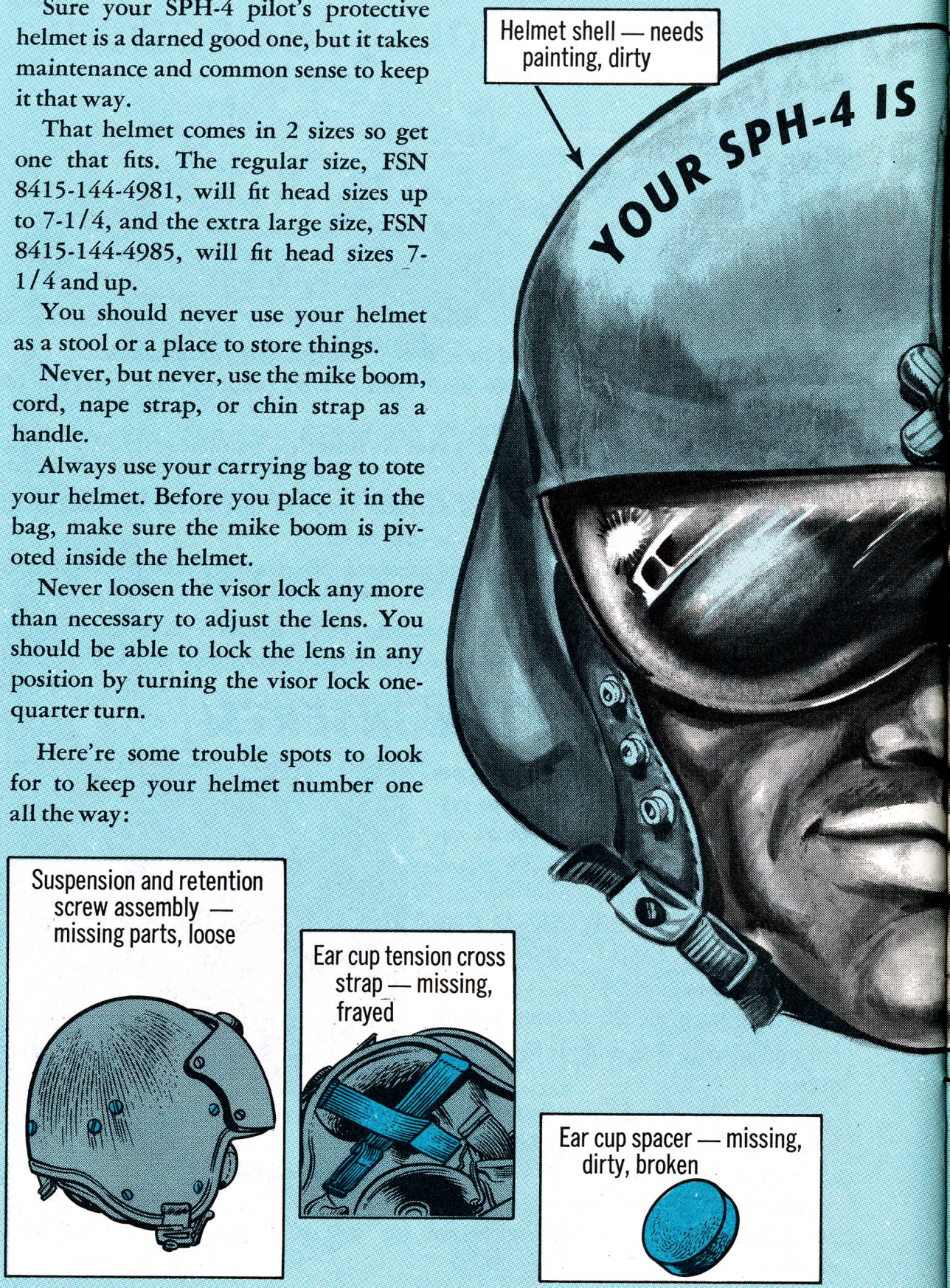
You should never use your helmet as a stool or a place to store things.

Never, but never, use the mike boom, cord, nape strap, or chin strap as a handle.

Always use your carrying bag to tote your helmet. Before you place it in the bag, make sure the mike boom is pivoted inside the helmet.

Never loosen the visor lock any more than necessary to adjust the lens. You should be able to lock the lens in any position by turning the visor lock one-quarter turn.

Here're some trouble spots to look for to keep your helmet number one all the way:



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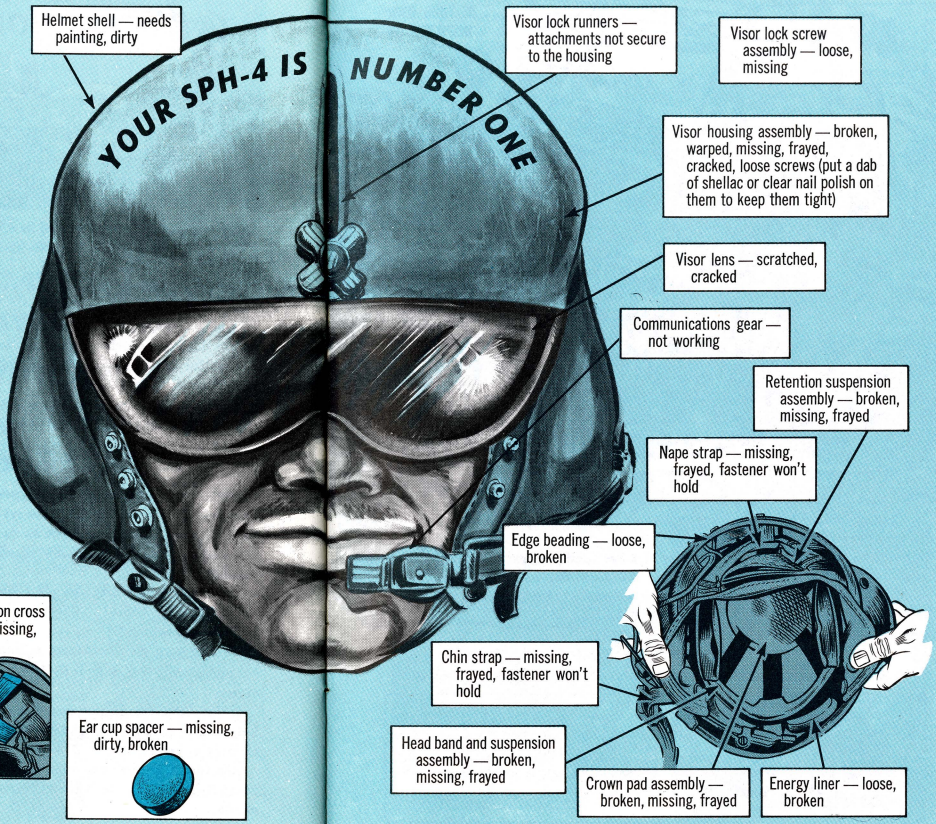
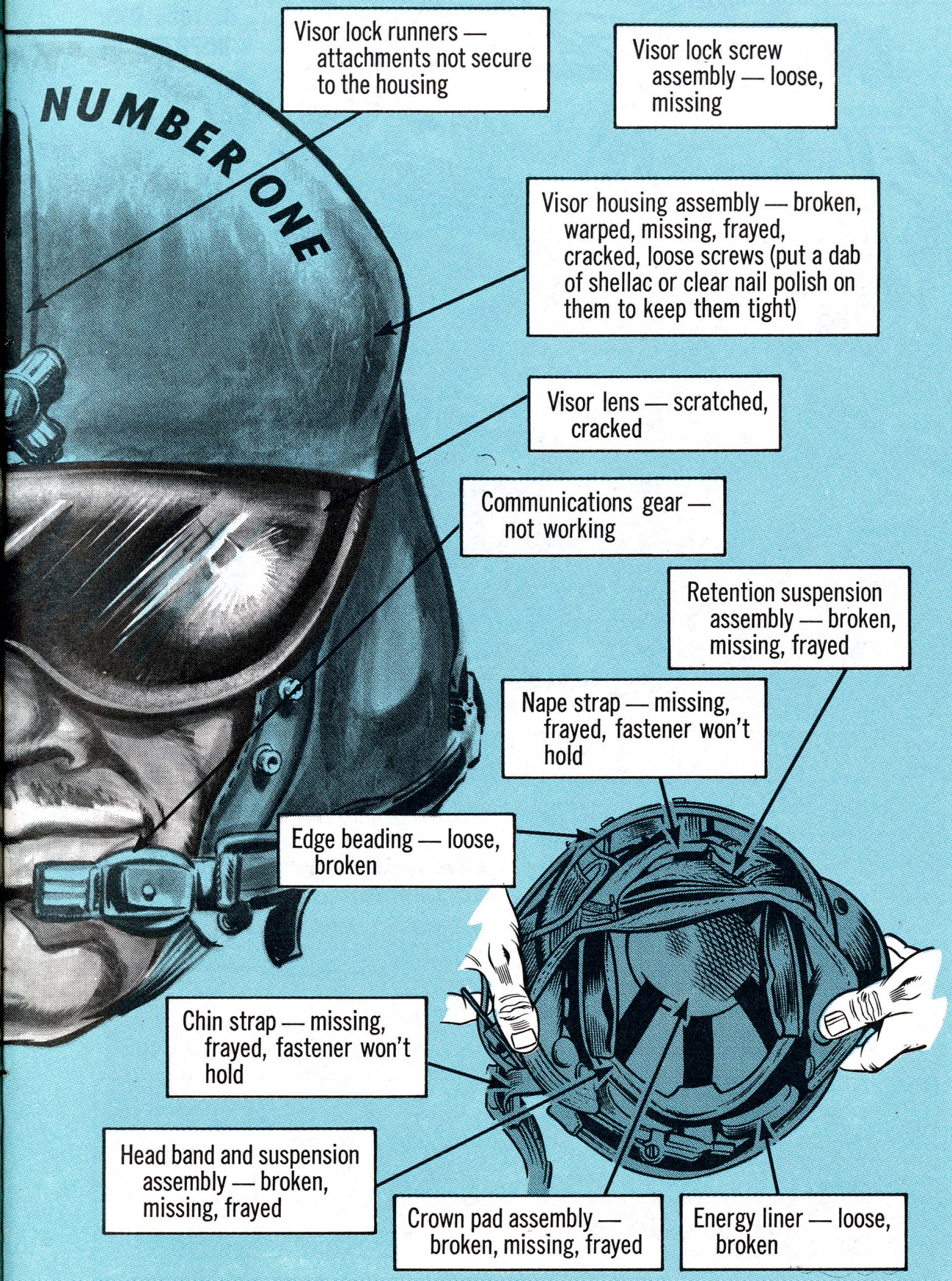



Visor lock runners — attachments not secure to the housing
Visor lock screw assembly — loose, missing
NUMBER ONE
Visor housing assembly — broken, warped, missing, frayed, cracked, loose screws (put a dab of shellac or clear nail polish on them to keep them tight)
Visor lens — scratched, cracked
Communications gear — not working
Retention suspension assembly — broken, missing, frayed
Nape strap — missing, frayed, fastener won't hold
Edge beading — loose, broken
Chin strap — missing, frayed, fastener won't hold
Head band and suspension assembly — broken, missing, frayed
Crown pad assembly — broken, missing, frayed
Energy liner — loose, broken

COMBAT SUPPORT

BE YOUR OWN INSPECTOR ON . . .

ROUG TERR

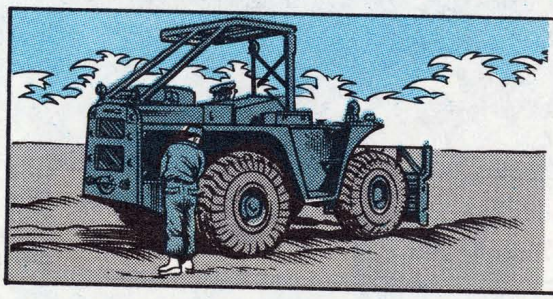
You can feel 10 feet tall and strong as an elephant with your Chrysler, Anthony, or Pettibone-Mulliken forklift.

Forklifts may not look alike, but they all have similar working parts. Here's a rundown on parts common to all rough-terrain forklifts.

Items in **bold type** are real serious. Get them fixed, toot sweet, before more trouble crops up.

TAKE A WALK

To get going, walk around your heavy heaver for an all-over scan. Look for—



☐ GENERAL CONDITION — Excess dirt, rust-spotted, body cracks, sags to one side; fluid, lube or fuel **leaks.**

COMBAT SUPPORT

BE YOUR OWN INSPECTOR ON . . .

ROUGH TERRAIN FORKLIFT

TOUGH AS THIS MACHINE IS IT NEEDS THE RIGHT CARE – AND YOU START YOUR CARE WITH A SHARP INSPECTION!

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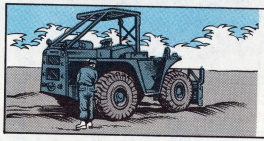
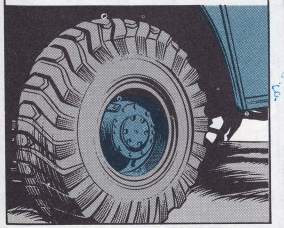
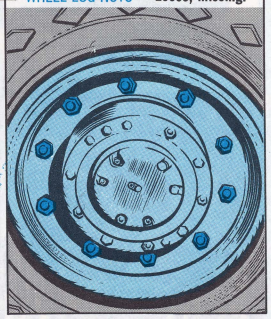


☐ GENERAL CONDITION — Excess dirt, rust-spotted, body cracks, sags to one side; fluid, lube or fuel **leaks.**

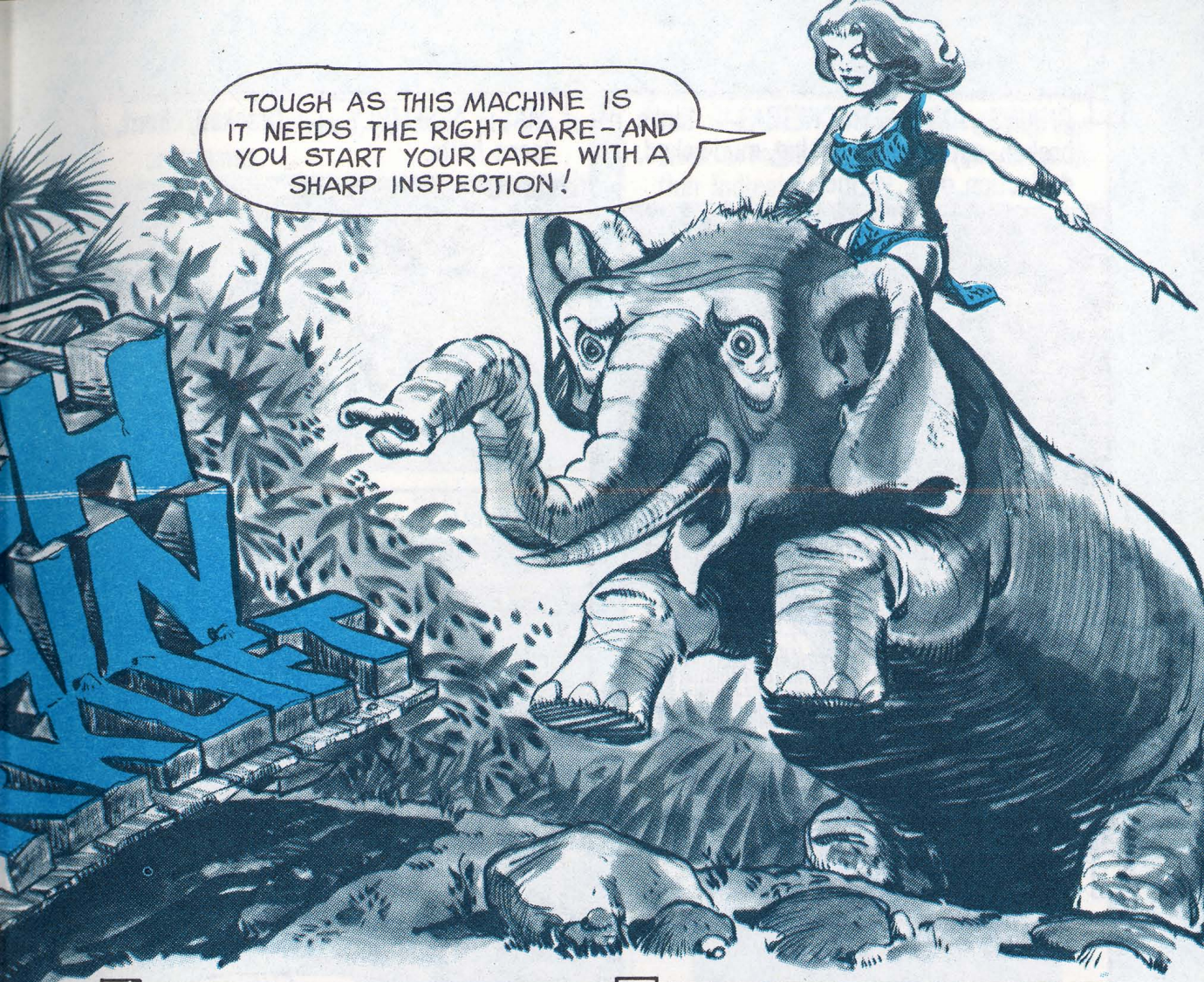
☐ TIRES — Under-inflated, flat, **torn or badly worn,** cut. (Correct pressures are 35 lbs rear and 45 lbs front in the 6,000-lb models, 50 lbs front and 45 lbs rear in 10,000-lb rigs.) You can use 10 to 15 lbs PSI less in real soft ground.



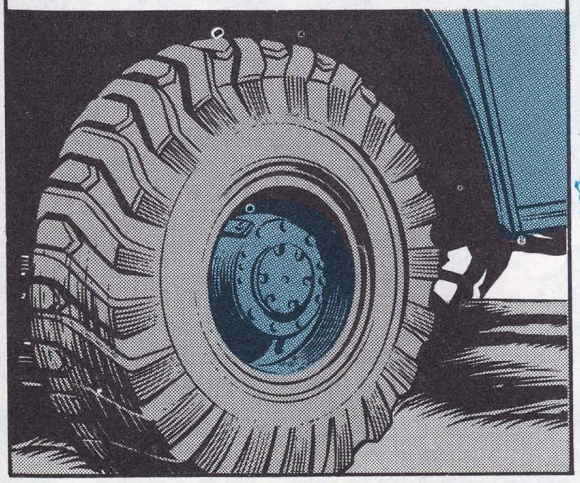
☐ WHEEL LUG NUTS — **Loose, missing.**



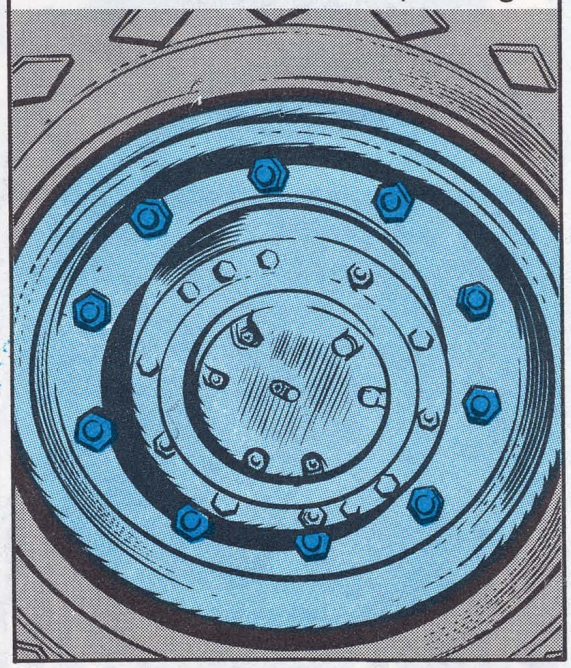
PS MORE



TIRES — Under-inflated, flat, **torn or badly worn,** cut. (Correct pressures are 35 lbs rear and 45 lbs front in the 6,000-lb models, 50 lbs front and 45 lbs rear in 10,000-lb rigs.) You can use 10 to 15 lbs PSI less in real soft ground.

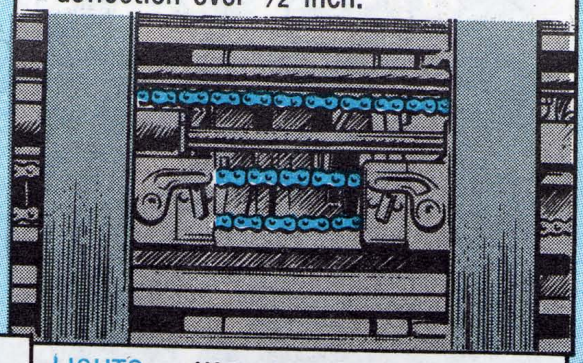


WHEEL LUG NUTS — **Loose, missing.**

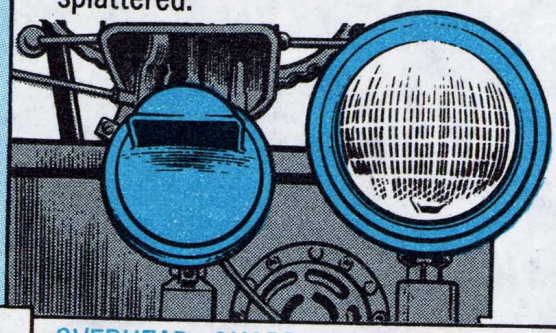


PS MORE

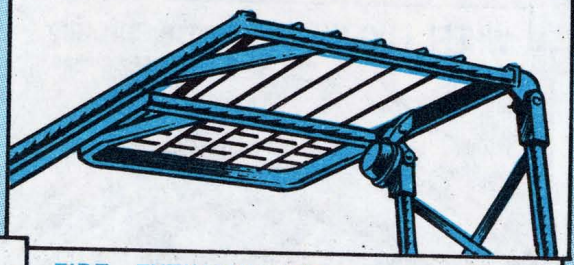
CHAINS AND SPROCKETS — Links broken, **cotter pins missing,** mud-caked, deflection over ½ inch.



LIGHTS — Waterlogged, wires exposed or frayed, lenses cracked, broken, paint-splattered.

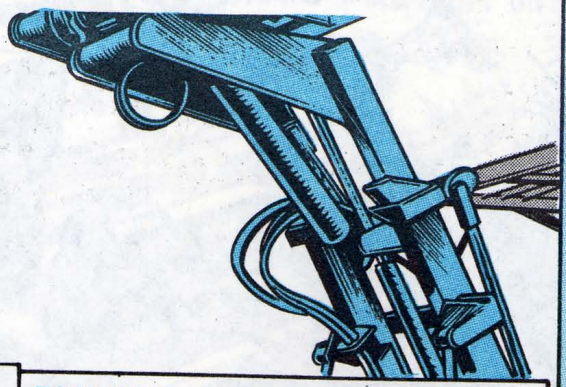


OVERHEAD GUARD — Bolts or pins missing, members **cracked or broken,** corner mounts insecure.

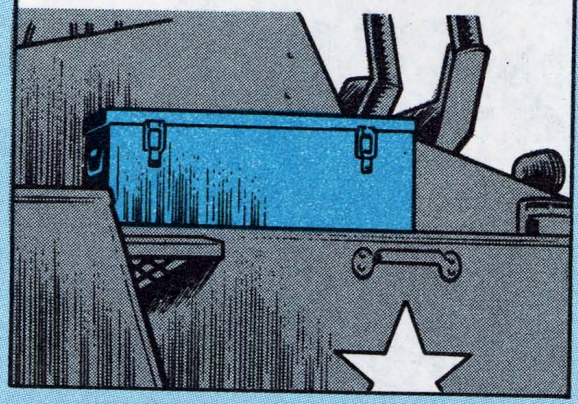


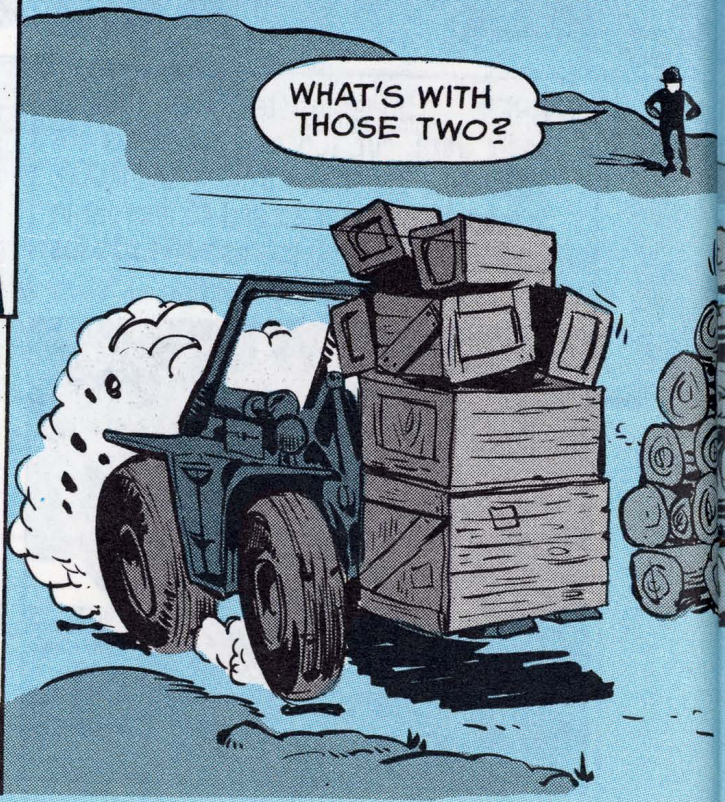
FIRE EXTINGUISHER — **Discharged, jammed or broken** handle, nozzle, case, or clip.

MAST ASSEMBLY — **Cracked, bent,** loose bolts.

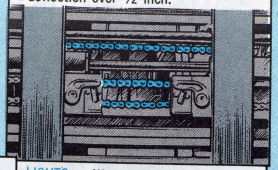


TOOL BOX — Cover fastener jammed or broken, mount loose, rust inside.

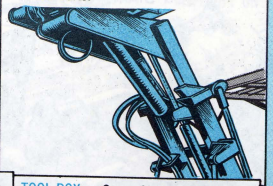




CHAINS AND SPROCKETS — Links broken, **cotter pins missing,** mud-caked, deflection over ½ inch.



MAST ASSEMBLY — **Cracked, bent,** loose bolts.



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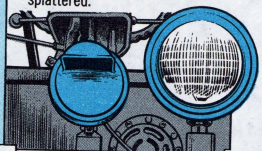

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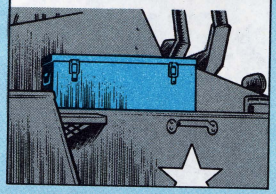

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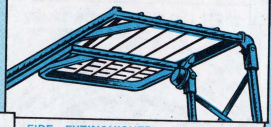

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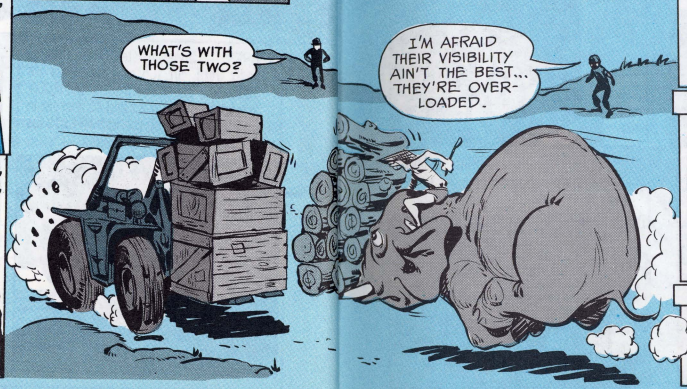
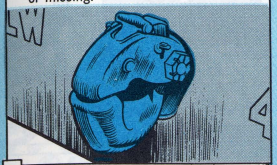
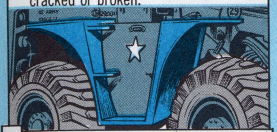


PINTLE — Unlubed, jammed, pin stuck or missing.

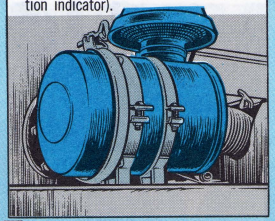


FENDERS — Bent, welded seams cracked or broken.



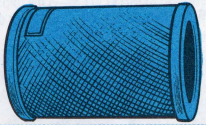
SPLASH COVERS — Dangling, loose, bent, lower section hinges jammed or **broken.**

AIR CLEANER — **Leaking,** thumb fastener or mount loose, **dirty** (check condition indicator).



AIR CLEANER INTAKE — **Blocked,** housing loose, damaged, hose **cut** or holed.

AIR FILTERS — Cores dirty, **missing.** (Never clean dry-core filters with carbon tet or flammable liquids. Soap, water, and air-dry if you **must** wash 'em).

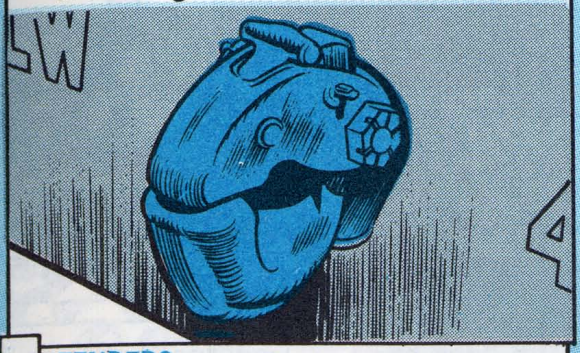


COUNTERWEIGHT — Bolts loose, missing, **twisted (any** bolt stretch or cut is bad).

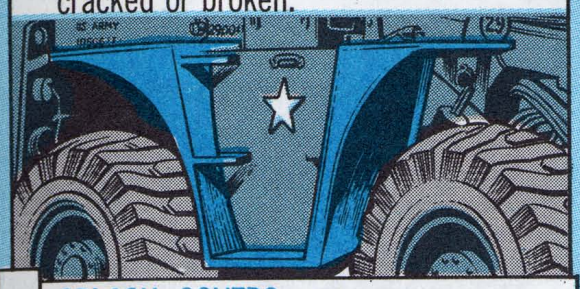
COOLING SYSTEM — Trashy, water dirty, coolant level low, hose clamps allowing leaks; in season, anti-freeze insufficient for expected low temperature (see TB 750-651).

P.S. MORE

PINTLE — Unlubed, jammed, pin stuck or missing.



FENDERS — Bent, welded seams cracked or broken.



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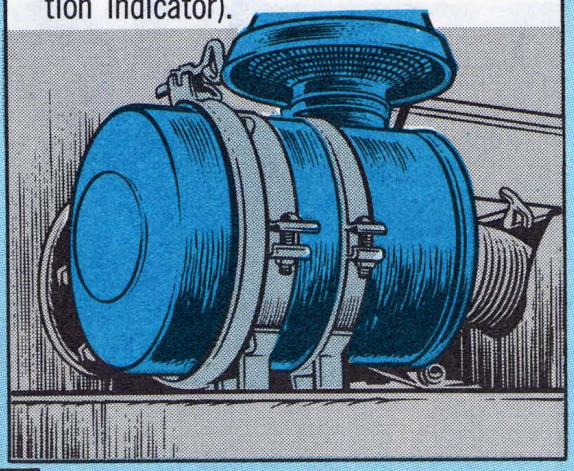

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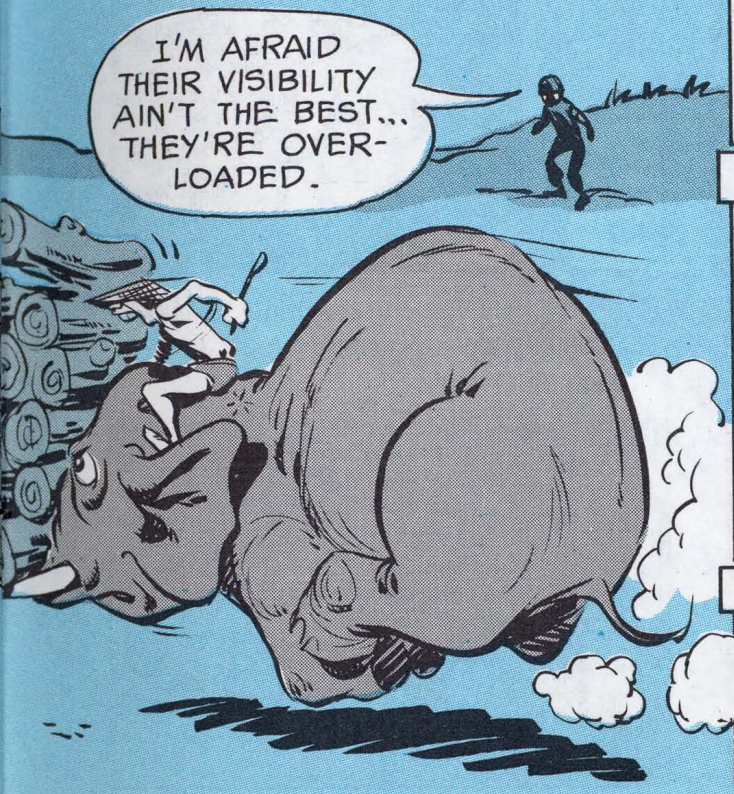
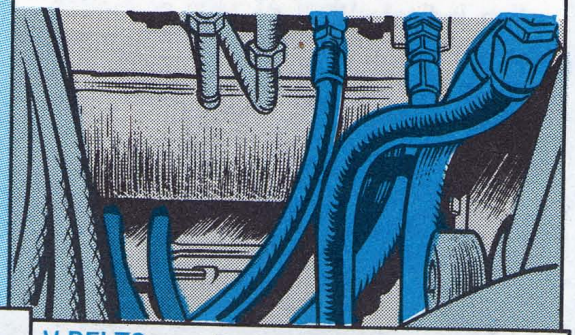


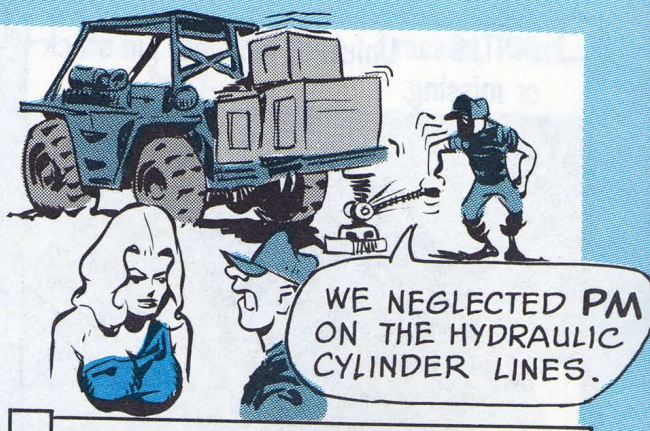
COUNTERWEIGHT — Bolts loose, missing, **twisted (any** bolt stretch or cut is bad).

COOLING SYSTEM — Trashy, water dirty, coolant level low, hose clamps allowing leaks; in season, anti-freeze insufficient for expected low temperature (see TB 750-651).

PS MORE

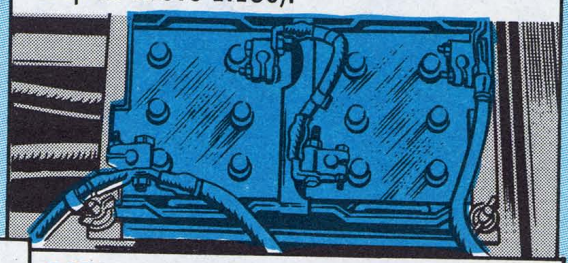
HYDRAULIC CYLINDERS, LINES — Leaking, kinked, deeply nicked.



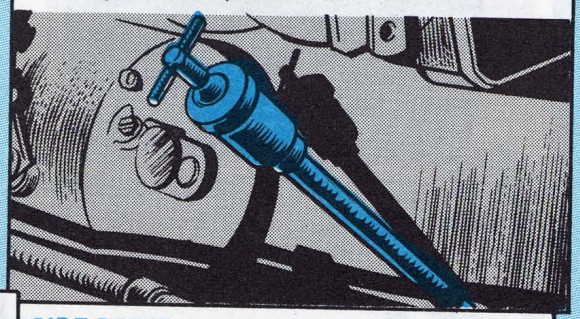


V-BELTS — **Broken, loose,** cut, mismatched.

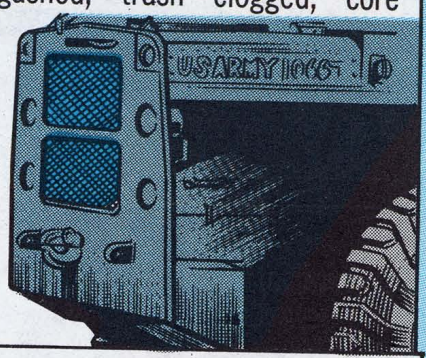
BATTERIES — Electrolyte not over plates (inspect weekly to be sure specific gravity is above 1.240, and in tropics above 1.180).



OIL AND FLUID LEVELS — Low, dipstick dirty (check hydraulic oil with fork down and power off).

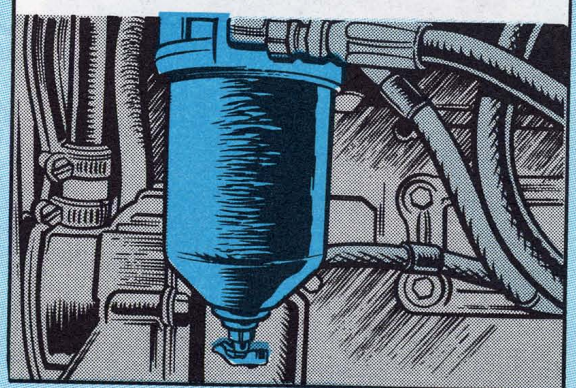


RADIATOR — Screen bent, scrapes shell, gashed; trash clogged; core leaking.



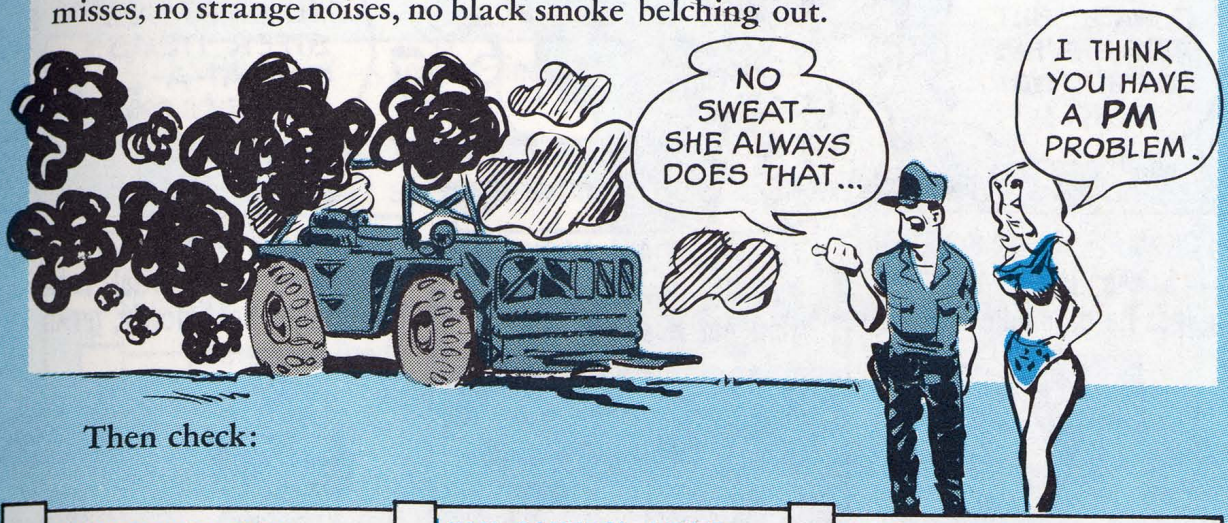
SIDE PANELS — (Left side on MLT6 and MLT6CH, both upper and lower) Bent, unsecured; hydraulic lines leaking or kinked; lube points not serviced.

FUEL FILTERS — Drain primary daily, secondary weekly; clean or replace elements quarterly.



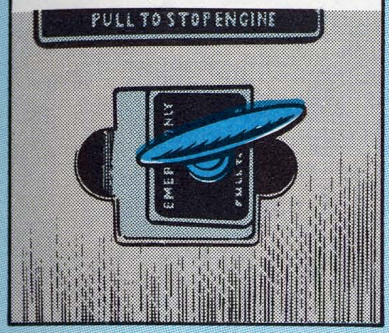
ENGINE CONTROLS

Now start up, and let your ears tell you if it's running right — no backfires, no misses, no strange noises, no black smoke belching out.

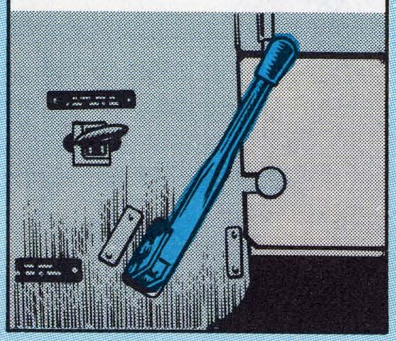


Then check:

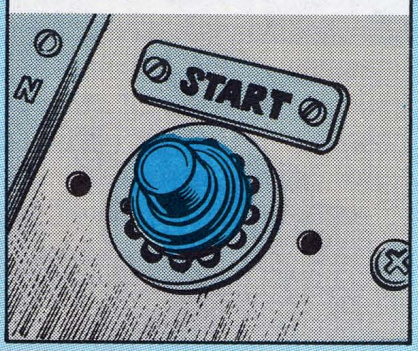
☐ EMERGENCY STOP — Foreign matter jams slot; handle **broken,** bent.



☐ FAN CONTROL LEVER — Not working, sticks, won't stay in place.

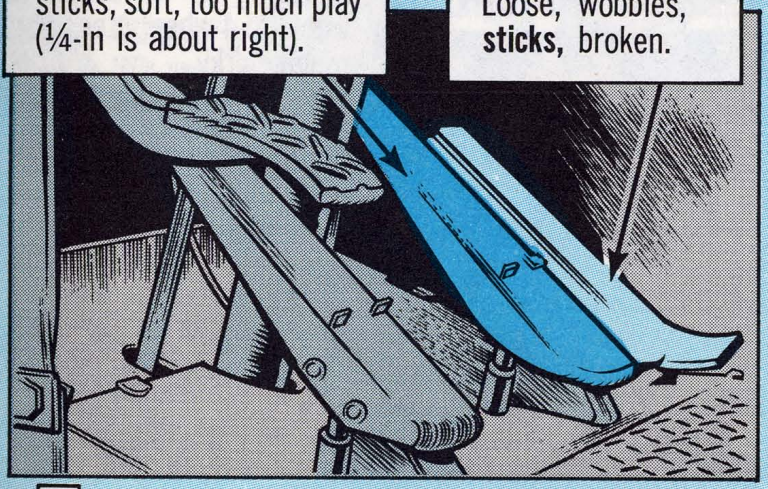


☐ START BUTTON — Unseated, broken, erratic (flutters or stutters).

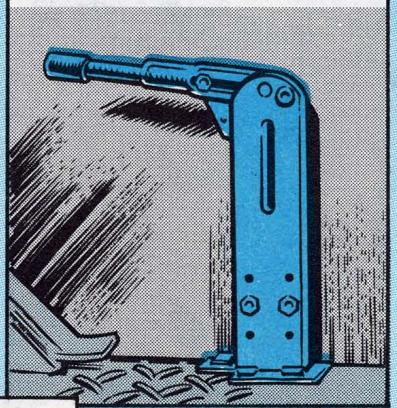


☐ SERVICE BRAKE — Pedal sticks, soft, too much play (¼-in is about right).

☐ ACCELERATOR — Loose, wobbles, **sticks,** broken.



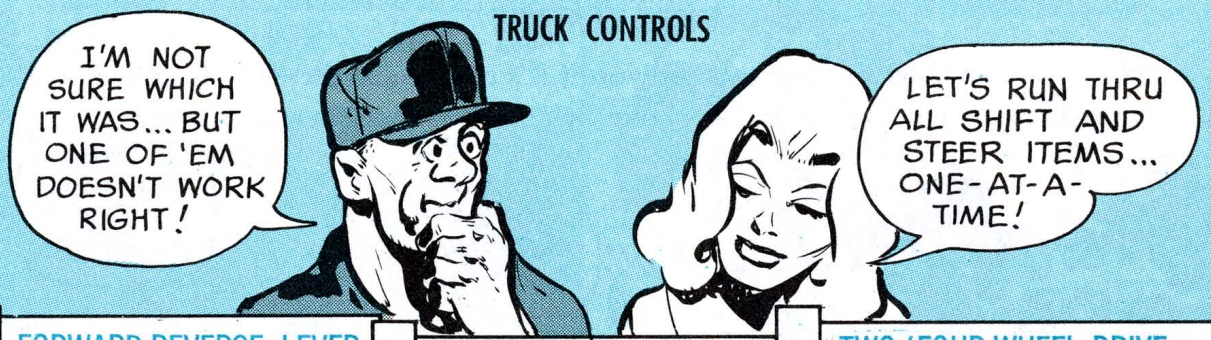
☐ PARKING BRAKE — Parts missing, loose, **goes to last notch** before engaging or **won't hold.**



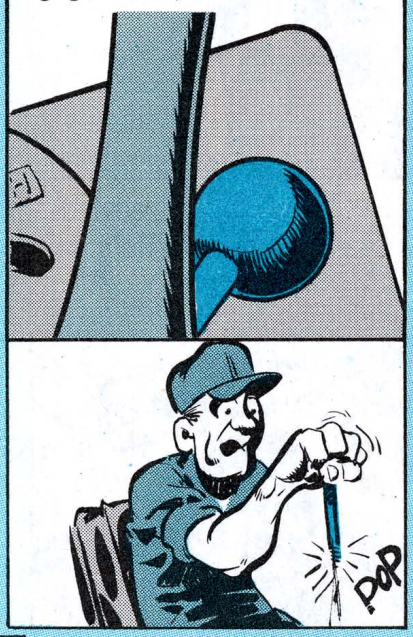
☐ NORMAL STOP — Handle damaged; shaft binding, **broken.**

PS MORE

TRUCK CONTROLS

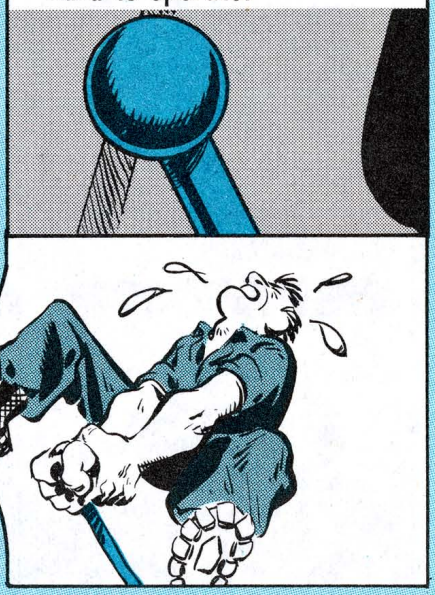


FORWARD-REVERSE LEVER — **Sticks in neutral,** engages hard, handle loose.

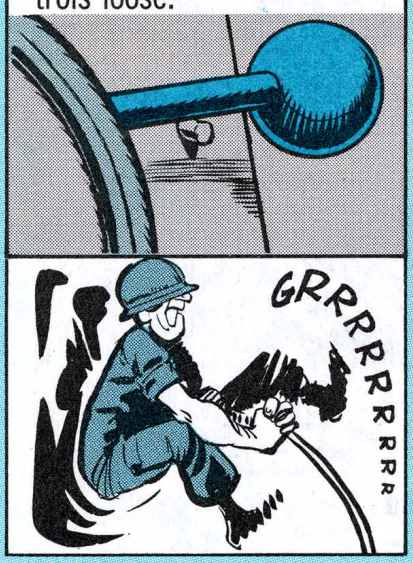


DIFFERENTIAL LOCKOUT PEDAL — Grabs, jerks; **action not positive.**

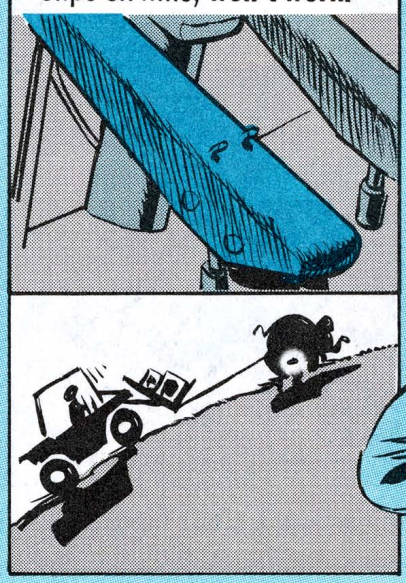
TWO/FOUR-WHEEL DRIVE — **Overrides differential lockout,** takes hold slowly, jerks, hard to operate.



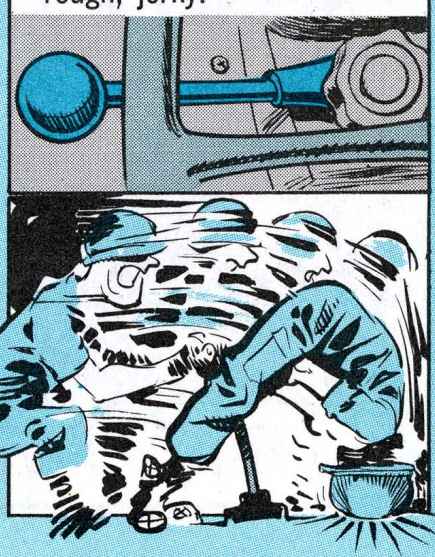
TRANSMISSION-TRANSFER — Shifts hard, growls, controls loose.



INCHING PEDAL — Jerky, slips on hills, **won't work.**

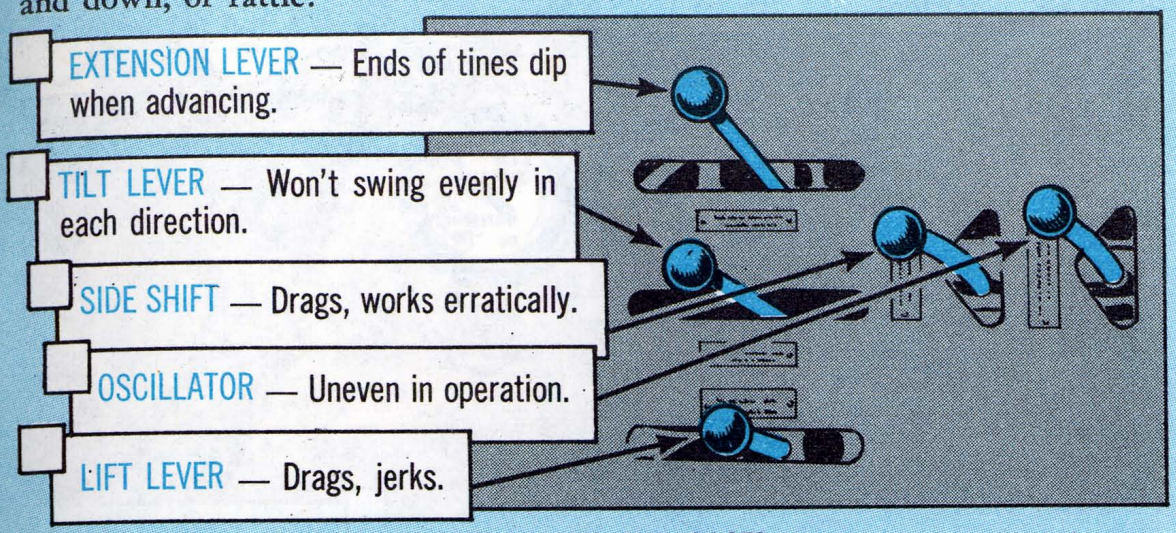


CRAB-CRAMP CONTROLS — Changing in or out of 2-wheel-to-4-wheel steer hard, rough, jerky.



FORK CONTROLS

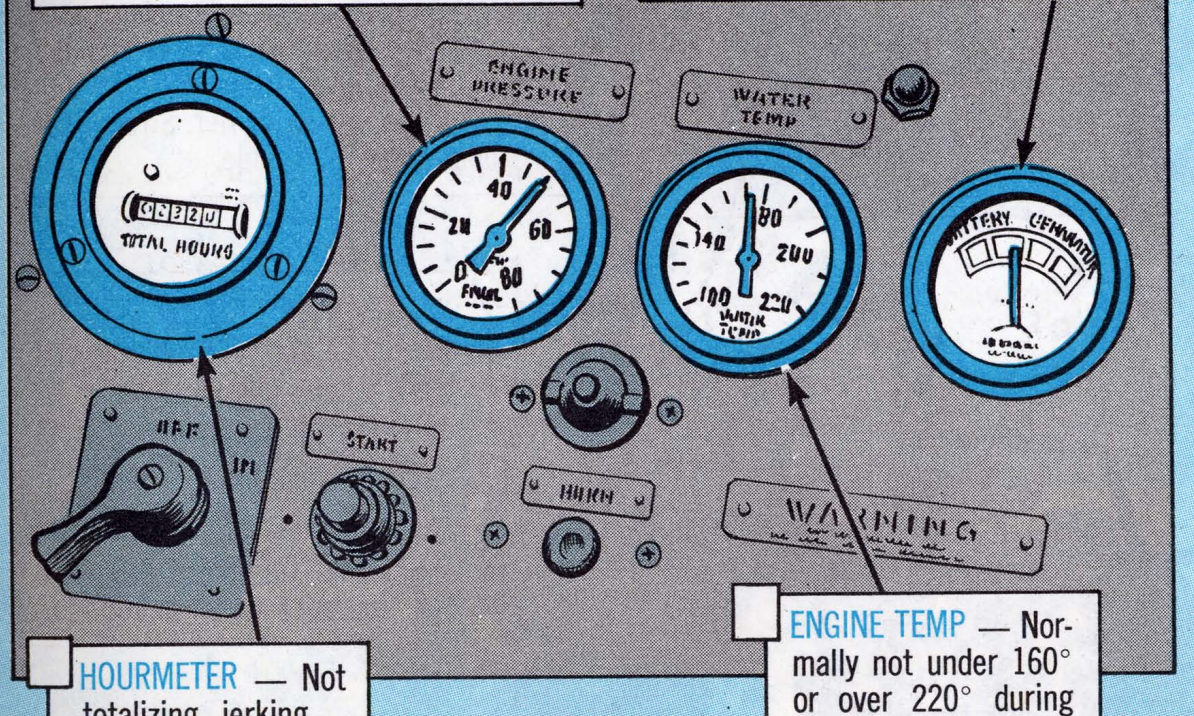
Take one at a time in rotation to be sure they don't jump back and forth, up and down, or rattle:



- EXTENSION LEVER — Ends of tines dip when advancing.
- TILT LEVER — Won't swing evenly in each direction.
- SIDE SHIFT — Drags, works erratically.
- OSCILLATOR — Uneven in operation.
- LIFT LEVER — Drags, jerks.

INSTRUMENTS AND GAGES

These rate a separate rundown, because they tell you when everything is OK.

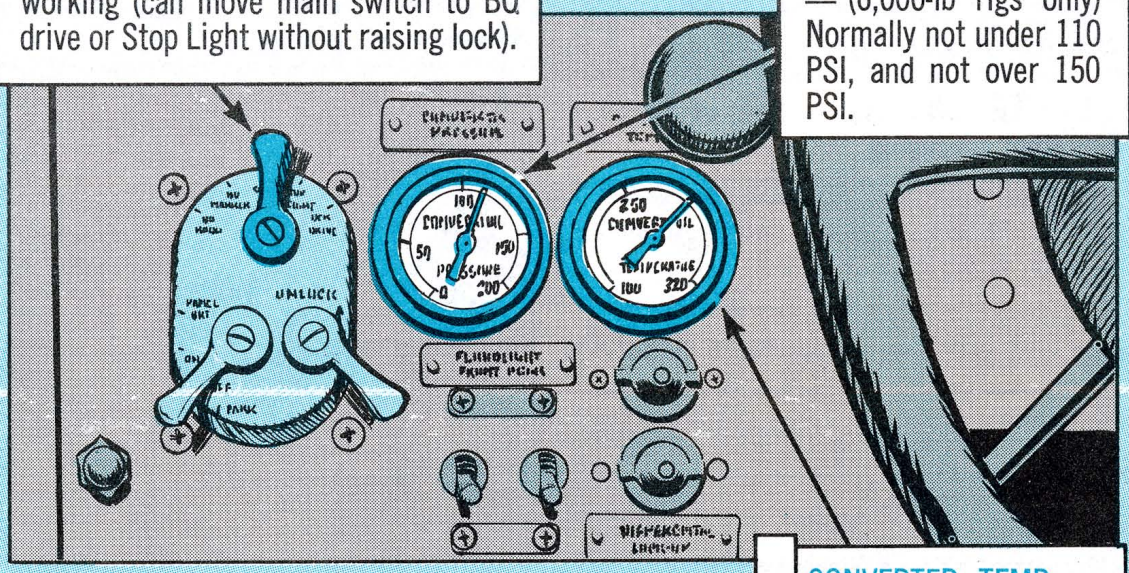


- ENGINE OIL PRESSURE — Not in right range: should be 40-60 PSI at working speeds, and on Anthony or Chrysler, low idle can drop it to 8-15 PSI and still be OK.
- BAT-GEN INDICATOR — Not working, reads wrong (on high idle, should be well into GREEN; with engine stopped but ignition ON should be well into YELLOW for 24-volt reading).
- HOURMETER — Not totalizing, jerking.
- ENGINE TEMP — Normally not under 160° or over 220° during work run.

PS MORE

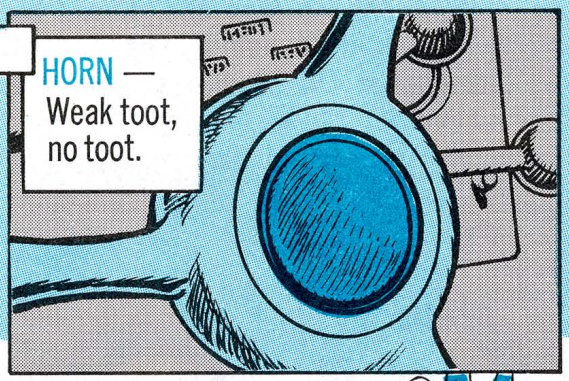
LIGHT SWITCH — Locking switch not working (can move main switch to BQ drive or Stop Light without raising lock).

CONVERTER PRESSURE — (6,000-lb rigs only) Normally not under 110 PSI, and not over 150 PSI.



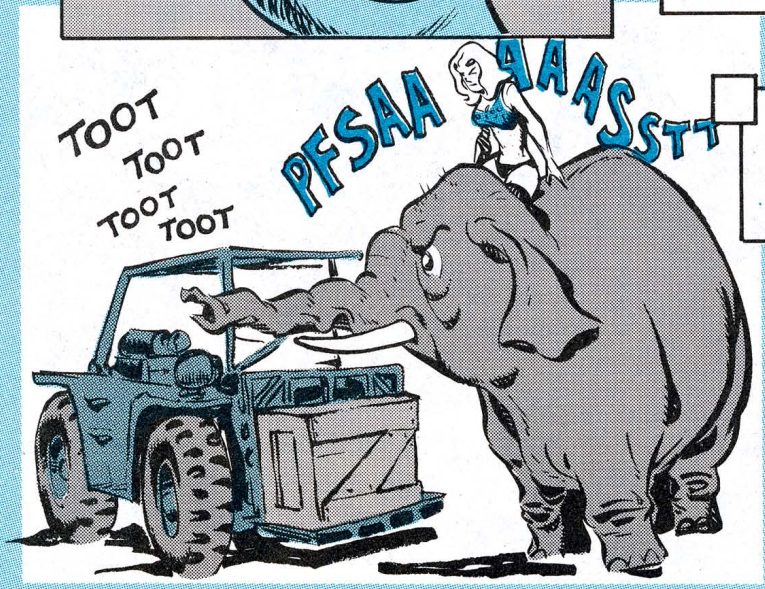
CONVERTER TEMP — Normally not under 100° or over 250° on MLT6 or MLT6CH 6,000-lb trucks; not under 100° or over 280° on 10,000-lb units.

LIGHTS — Stop light, headlights, BO Drive, front and rear floods, panel — and turn signals, too — do all work OK?



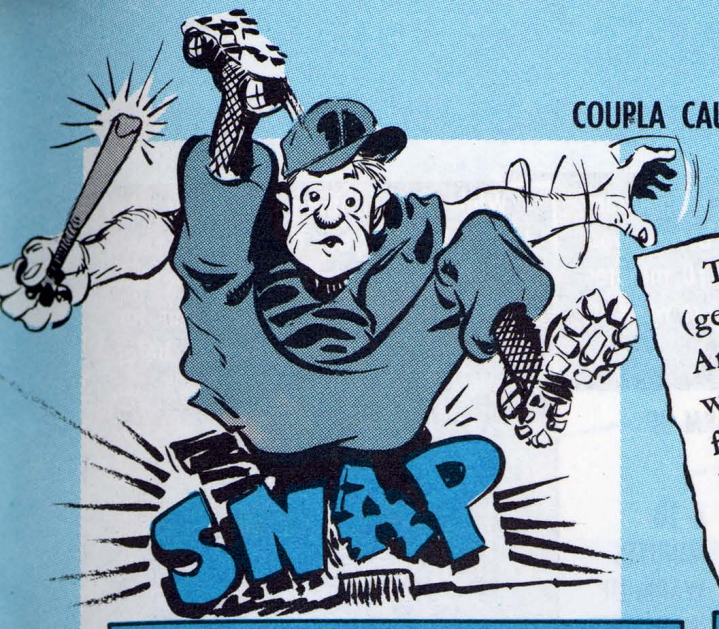
HORN — Weak toot, no toot.

AMMETER — Won't work; needle should go well into CHARGE area at start, then drop back at or near center. Strong DIS reading indicates trouble.



CLUTCH OIL PRESSURE — Not under 100 PSI or over 175 PSI on 10,000-lb trucks.

BRAKE OIL PRESSURE — Normal range 0 to 400 PSI.



COUPLA CAUTIONS

The Transfer transmission handles (gear shifts, that is) on Chrysler and Anthony 6000's, are made to break when somebody tries to jam to reverse from forward or vice versa. Better a busted handle than a torn-out transmission. Better still, to have no bust-ups at all—

1. S—T—O—P first before shifting directions . . . and Lo! No damage.

2. Never gear down one of these rigs to slow up. Diesels aren't built for it. You can lose an engine.

What you do is brake down to lose speed, either on a steep grade, or under load, or both. Brake shoes you get for $9 apiece, but cook a transmission and you've spent $2189. Add $3126 for an engine, carelessness is costly.

TENDER SPOTS

On Pettibones, check the underside to be sure the low-slung hydraulic cylinder is leak-free and unhurt. It's your crab-cramp go-box, and you can cream it if you don't take it easy over rocks, curbs, and rail tracks.

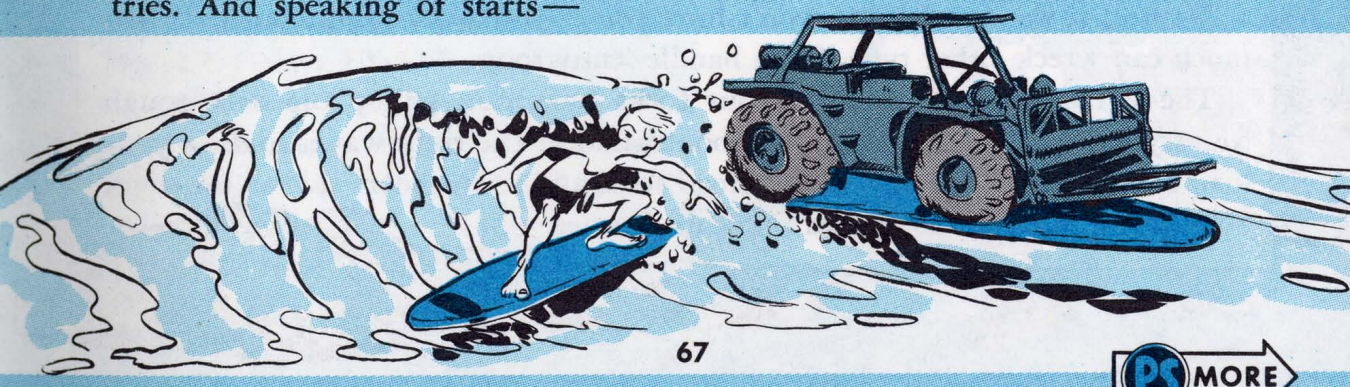
On any brand, no hot-rodding and no skip-loading.

Inching clutches aren't brakes. Taking that shortcut overheats coverter oil fast.

Even tho your LO doesn't emphasize U-joints and steering linkage points do check each and every one, especially when you've worked in surf. You relube every time you've been seagoing.

Nylon or teflon bushings on your side-shift rod get no lube. Sand will get in and grind both rod and bushing up.

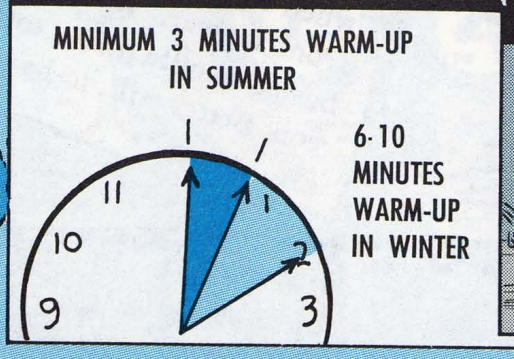
When starting, avoid shoving on that starter button longer than 30 seconds at once. Who wants a burned-out armature? Give it a 3-minute rest between tries. And speaking of starts—



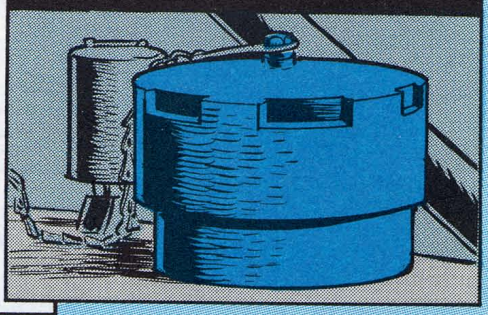
P.S. MORE

BEGIN LIKE THIS

Let your engine warm up a minimum of 3 minutes in summer before you move out, and give it 6 to 10 minutes warmup in winter. Diesels just need it, period.

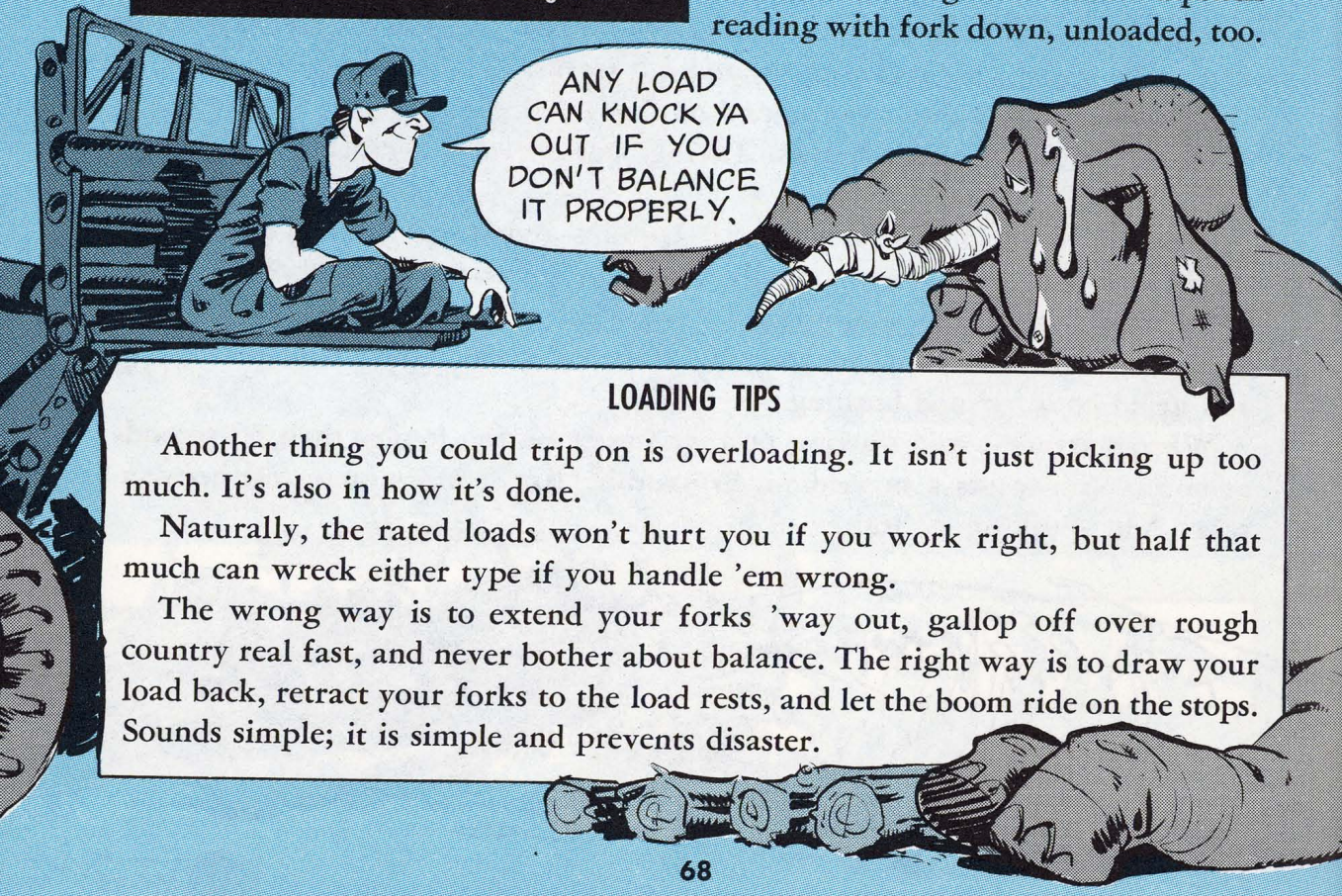


While it's warming up, loosen (but don't take off) your hydraulic reservoir cap. Then gently make a few motions — work your crab and cramp, your fork extension, your tilt, and so on, before you let wheels roll.



Then, fork down and empty, read your dipstick carefully. Add if needed, and tighten your hydraulic tank cap back up. Get a little forward or rearward movement on, **then** begin to steer as necessary. Do **not** wrestle your steering around while standing still.

That drill has the best of reasons: it'll get out air bells and vacuums in tank and lines so your pump won't "run dry" and burn. Moving before steering saves your booster cylinders, yokes, and knuckles. You get a "true" dipstick reading with fork down, unloaded, too.

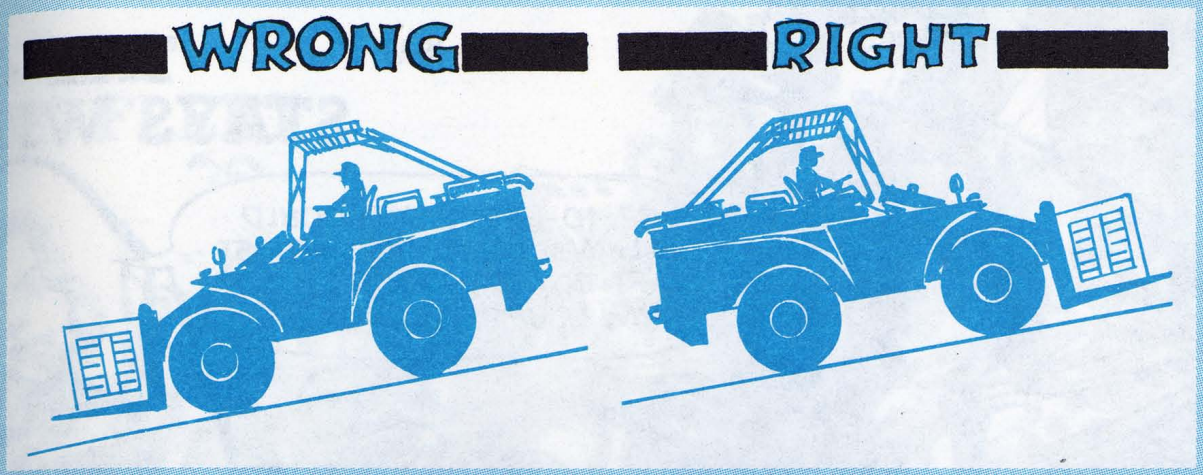


LOADING TIPS

Another thing you could trip on is overloading. It isn't just picking up too much. It's also in how it's done.

Naturally, the rated loads won't hurt you if you work right, but half that much can wreck either type if you handle 'em wrong.

The wrong way is to extend your forks 'way out, gallop off over rough country real fast, and never bother about balance. The right way is to draw your load back, retract your forks to the load rests, and let the boom ride on the stops. Sounds simple; it is simple and prevents disaster.



Another must is backing down ramps or long slopes. It protects your rig, your load and gives you better control.

SUCCESS TIPS

Water-wash dirty batteries, with filler caps tight, 'natch. A bit of cookshack soda in water helps clean cable ends and terminals.

Drain fuel system traps daily: get rid of that water to fight fungus.

Check after every lube job for cracks, leaks, and banged-up clamps.

Post forms and records by TM 38-750 and local SOP every day. You won't want to play catch-up when your turn comes on the Freedom Bird back to real life.

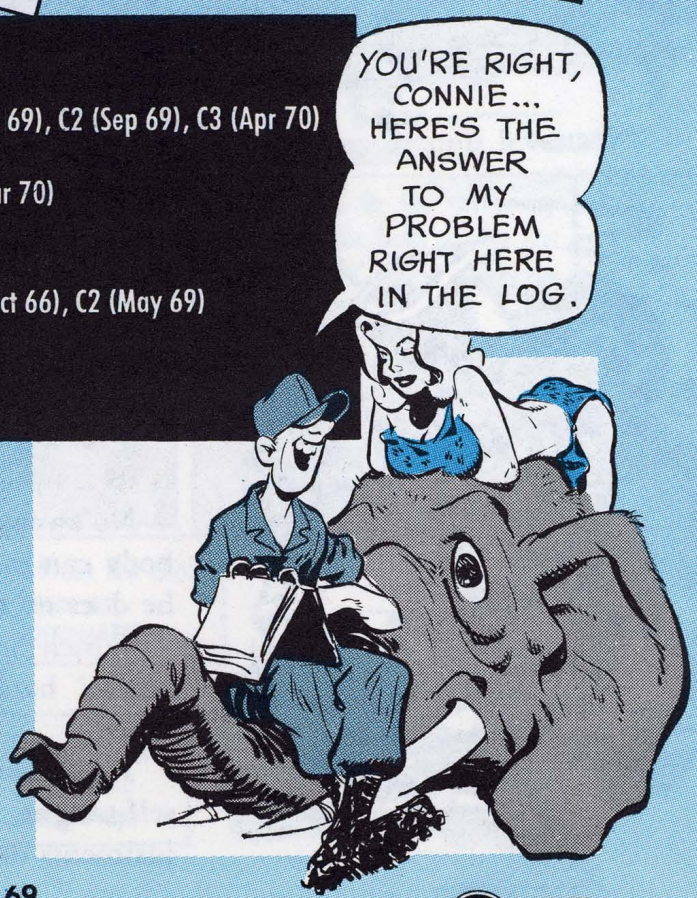
Keep your TMs well read. Here're the up-to-date pubs:

6,000 lb Forklifts . . .

TM 10-3930-242-12 (Jun 68) W/Change 1 (Jun 69), C2 (Sep 69), C3 (Apr 70)
-242-20P (Nov 69)
-242-35 (Sep 69) W/Change 1 (Mar 70)
-242-35P (Nov 69)

10,000 lb Forklifts . . .

TM 10-3930-243-12 (May 66) W/Changes 1 (Oct 66), C2 (May 69)
-243-20P (Jan 70)
-243-35 (Sep 66)
-243-35P (Jan 70)



Speaking of books, check to see whether MWO 10-3930-242-20/1 (Jun 69) is on your rig—Anthony Serial Nos LT-1 thru LT-533 and Chryslers CC-0001 thru CC-0789 get it. It'll end your problems on starters. Check your log books 2408-5. If the MWO hasn't been applied, get with your organizational mechanic pronto.

So that's it. Happy heavy heaving.

PS END

THE 40-
STAYS WITH

Sweetest thing about your 40-HP outboard motor is its simplicity.

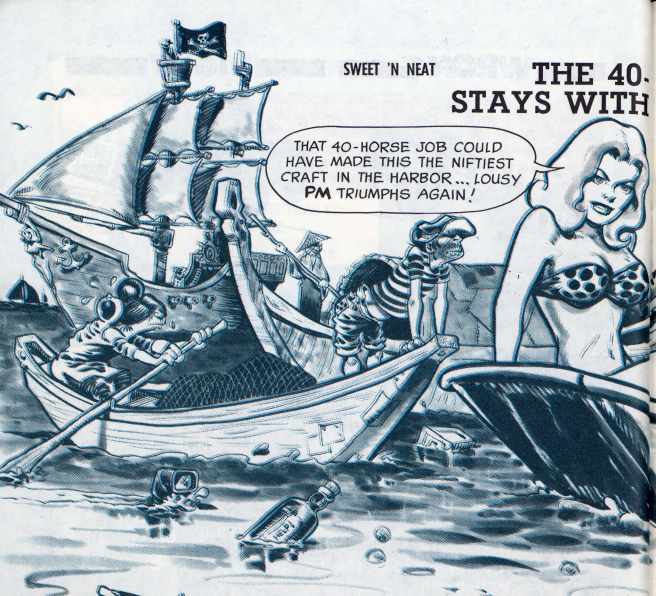
No sweat to operate; no sweat to maintain. Anybody can make it go and keep it going, as long as he does no more than he's supposed to.

Which brings us to Point No. 1: Keep your rice pickin' hands off things they aren't supposed to touch.

The science of outboard motor mechanics isn't self-taught. Meaning, don't make unauthorized adjustments or repairs. That's spelled **DON'T!**

SWEET 'N NEAT

THE 40-HORSE STAYS WITH THE FLEET



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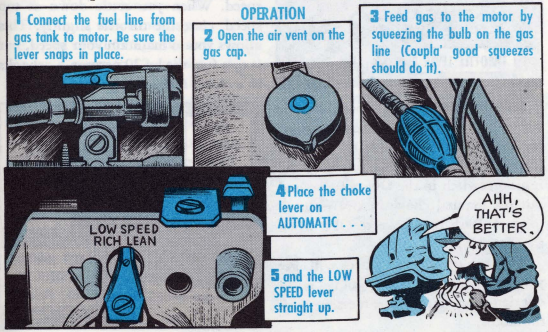
Here's the plain talk on operating and maintaining the 40-horse at unit level:



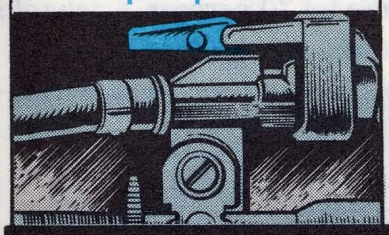
PS MORE

HORSE THE FLEET

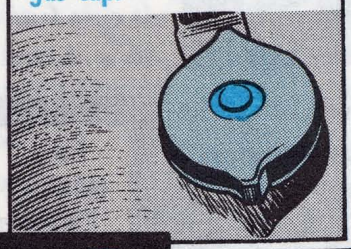
Here's the plain talk on operating and maintaining the 40-horse at unit level:

OPERATION

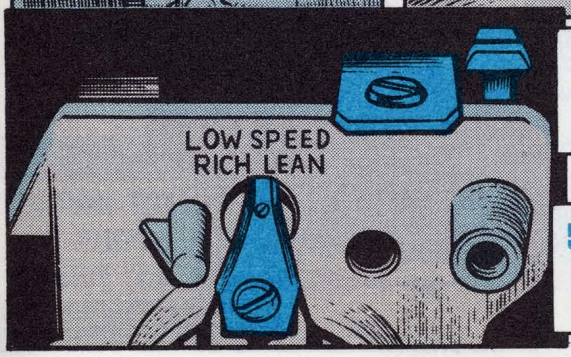
1 Connect the fuel line from gas tank to motor. Be sure the lever snaps in place.



2 Open the air vent on the gas cap.



3 Feed gas to the motor by squeezing the bulb on the gas line (Coupla' good squeezes should do it).

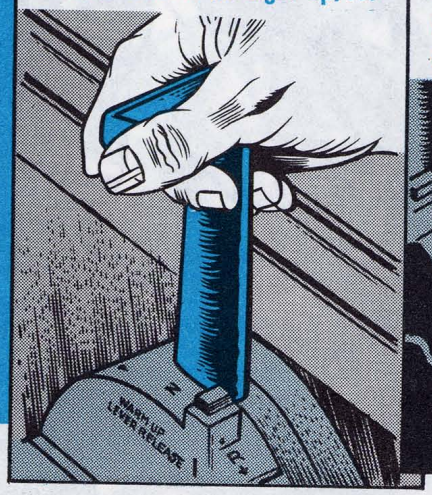


4 Place the choke lever on AUTOMATIC . . .

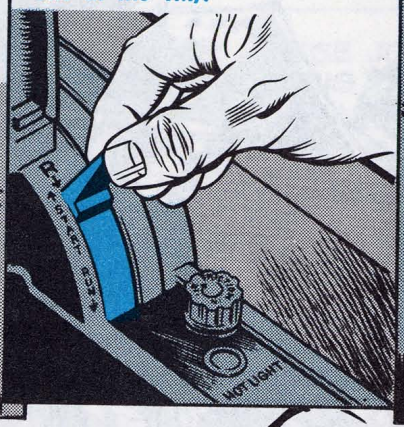
5 and the LOW SPEED lever straight up.

PS MORE

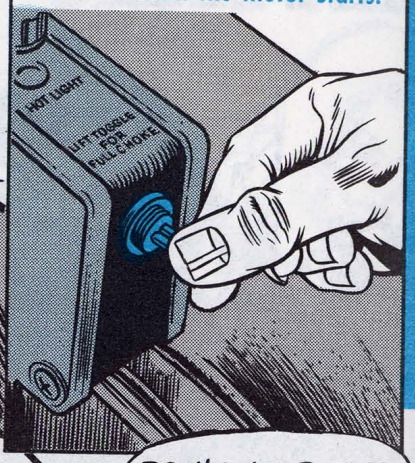
6 Place the remote control lever in neutral (straight up)...



7 And the throttle lever in START. (Since there are 3 levers, models, check your particular one in the TM).



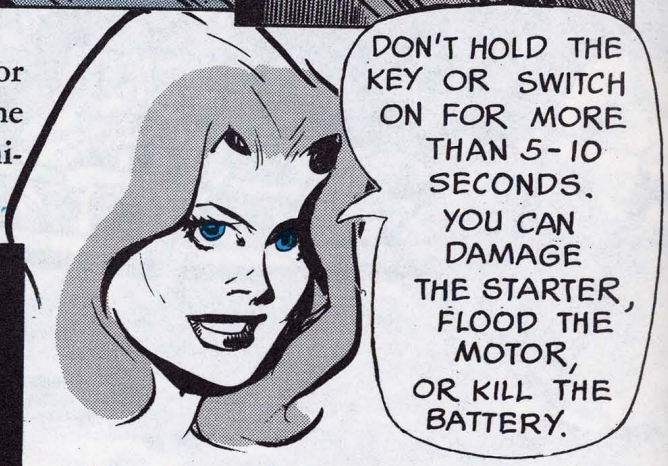
8 Turn the ignition key (or toggle switch, in SEA) and release it when the motor starts.



If you're using a new tank of gas, or it's the first start of the day, push in the manual choke switch next to the ignition until the motor gets going.

Allow the motor to warm up for a minute or two.

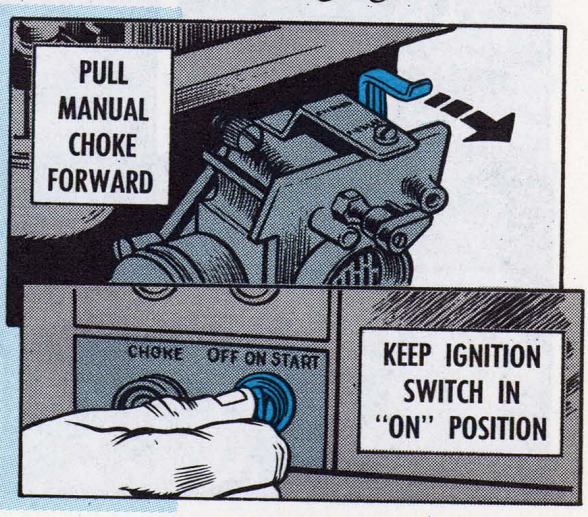
Place the throttle lever in IDLE SLOW or RUN, push the control lever forward slowly until the gears engage . . . and go!



The throttle lever controls your speed. When you settle down at top speed, close the throttle slightly. This allows you to maintain your speed, but it cuts fuel use by 20 percent . . . thanks to a clever fuel saver gadget.

MANUAL START — If your electric starter acts up, the procedure for starting the motor with the hand crank is identical . . . except that you keep the ignition switch in the ON position and put the manual choke in ON position to start. Push the choke to OFF when the motor starts.

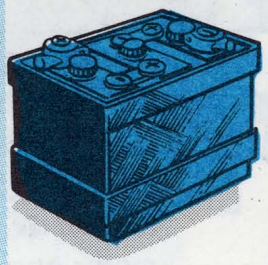
The foregoing procedure will get you going, and keep you going, without damage to and undue messing with the motor.



MAINTENANCE

Essential maintenance features read like so:

ELECTRICAL — Keep the battery fully charged. In SEA it should have a specific gravity reading of 1.200 to 1.225. Keep electrolyte above the plates always, and refill with distilled or rain water. Don't overfill. A low battery doesn't have the kick to turn the electric starter . . . and a "click" is all you'll get. Never let the specific gravity drop below 1.180.

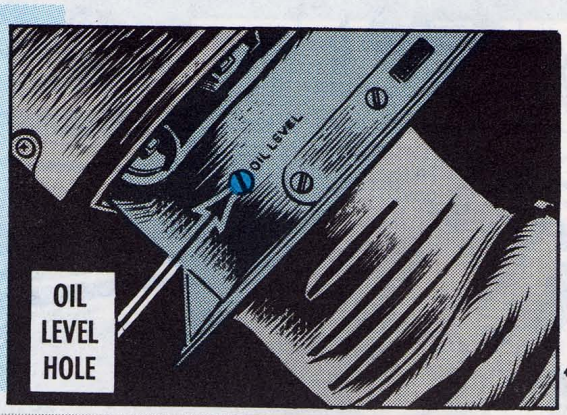


SPARKPLUGS — Use fresh, clean sparkplugs . . . and carry spares. Your motor takes J4J Champions, M42K ACs or A21X Autolites . . . with gap set at .030. A hard-to-start motor could mean you need a plug change.

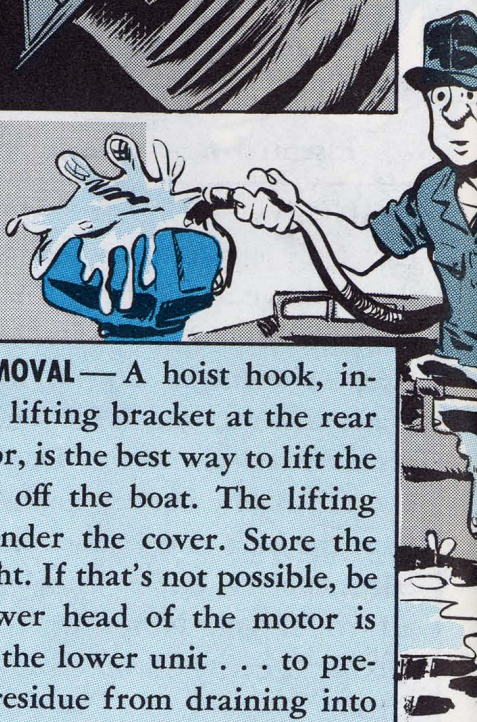
OIL — Your motor uses a 50-1 oil-gas mix, which means you use a pint of oil to 6 gallons of gas, or a quart to 12 gallons. For a good mix, put about a gallon of gas in the bottom of the tank, add the oil and shake the tank about a dozen times. Fill the tank with the remaining gas and swing the tank about 20 times to mix it good. Never use stale gas. It gums the carburetor, fouls the plugs, etc. For the first 10 hours on a new motor the fuel-oil mix is 25-1. That's one quart of oil to 6 gallons of gas.

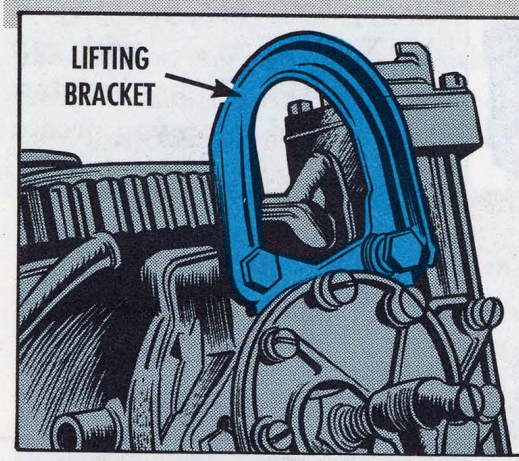
PS MORE

LOWER UNIT LUBE — The gear case lube level should be checked after every 50 hours operation . . . and filled so's you can see the lube at the OIL LEVEL hole. Use hyphoid oil only. If you're not sure about number of hours, check the level anyway. Running the motor with oil level low or empty tears up the lower unit.

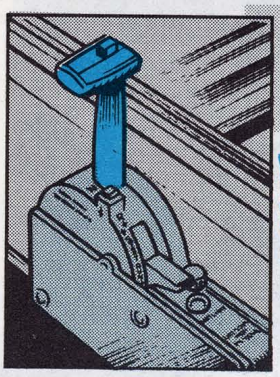


SALT WATER — After running the motor in salt or brackish water, rinse the exposed parts (all of them) with fresh water and go over everything with a lightly oiled cloth. You don't have to flush the cooling system with fresh water.





MOTOR REMOVAL — A hoist hook, inserted in the lifting bracket at the rear of your motor, is the best way to lift the dead weight off the boat. The lifting bracket is under the cover. Store the motor upright. If that's not possible, be sure the power head of the motor is higher than the lower unit . . . to prevent water residue from draining into the cylinders.



OVERHEATING — Glance at the temperature warning light on the control panel occasionally. If it glows red, check your TM to determine the cause of overheating.

SHIFTING — Shifting gears with power off can result in shift mechanism damage. Shift only with motor running.

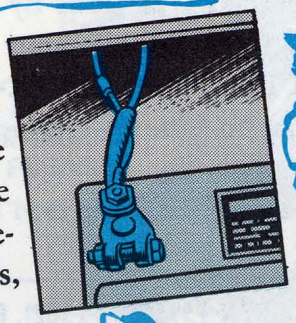
MISCELLANEOUS

STARTING — If the motor doesn't kick off after three or so tries with the electric starter, go through the starting procedure again to be sure you haven't missed something. If your checklist comes out OK, read up on your troubleshooting techniques in TM 5-2805-260-14 (Oct 69).

Either your mechanic or your support should check the 4 screws on the magneto assembly for tightness. A dab of adhesive compound, FSN 8030-081-2338 will keep them from working loose . . . and keep the plate and your flywheel from coming off . . . with beaucoup damage.

Never start the motor when it's out of water. In addition to tearing up the water pump, you might also kiss the moving parts of the motor goodbye.

The negative post of the battery is connected to the ground. Disconnect the ground before you remove the battery cables. Prevents arcs, fires, shocks, etc.



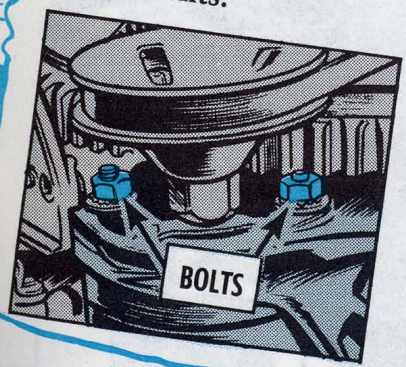
Coupla' stress points:

Mix oil and gas properly, in measure and type specified in TM.

Don't make unauthorized or unnecessary adjustments, including carburetor.

Shear pins shear. Remember to suspect that if you've got power and can't go.

Adhesive compound or a chisel burr on the threads of the generator bolts will keep the generator retaining nuts from backing off. Obvious benefits.



Speed-shop types gotta stay clear of high-speed propellers on this job, too. Maximum RPM range on the 40-horse is between 4500 and 5000. Anything faster'n that will tear up the motor. So stick with the issue prop.

Final reminder: Read the TM before you make a move . . . and keep it handy when you're operating the motor.

PS END

330 HAD GRADER PAIN?

PUBS HELP EXPLAIN

Numbers for got-to-have items on 330 HAD graders are hard to come by because there's no DA manual on 'em.

But lucky owners can get commercial type pubs by using U.S. Army Mobility Equipment Command SN 7610-C-3608. Submit your request as an exception-type requisition and mark it "ATTN: AMSME-RTR-R." You will get an operator's manual, a parts book for that In-Line 71 engine, and a grader parts book all together.

But because these are commercial manuals, they don't show FSN's for hard-to-keep stuff like this:

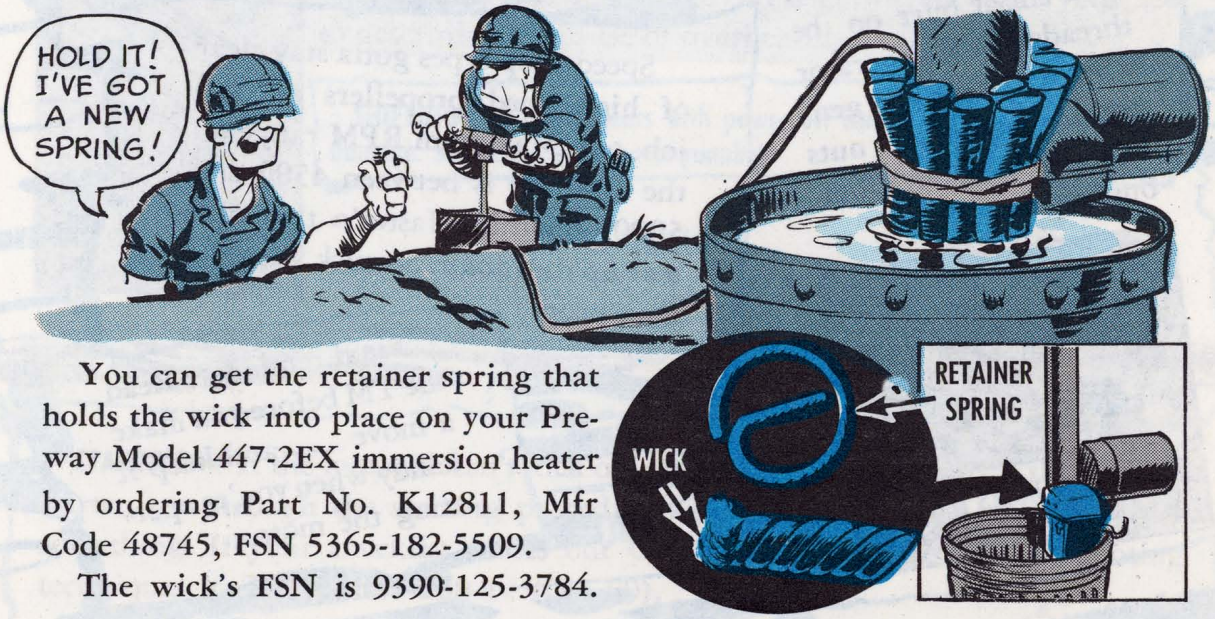
Element, Fuel Strainer, w/gasket, P/N 1595655(72582), FSN 2910-363-8608.

Element, Fuel Filter, w/gasket, P/N 5573261(70040), FSN 2910-287-5473.

Element, Air Filter, P/N 475602(35311), FSN 2940-930-4731.

Element, Lube Oil Filter, w/gasket, P/N 5573014(72582), FSN 2940-555-6348.

RIGHT HEATER—WRONG SPRING



You can get the retainer spring that holds the wick into place on your Preway Model 447-2EX immersion heater by ordering Part No. K12811, Mfr Code 48745, FSN 5365-182-5509.

The wick's FSN is 9390-125-3784.

AH, SO . . .

THERE'S CODE IN THEM-THAR MILS

The new generator serial numbers remind you of Ancient Sanskrit? Whoa — there's a message in those digits. Here's how you decode it:

1. The first letter in the serial number tells who made any Mil-Standard-driven item, as:
   - A = International Diesel
   - B = Bogue Electric
   - C = Continental Motors
   - D = Kurz & Root Co.
   - E = Onan
   - F = Fermont
   - G = Hol-Gar Mfg Co
   - H = Eagle Engineering
   - J = Rett Electronics
   - K = John Hollingsworth
   - L = Westinghouse Electric
   - M = Jeta
   - N = Chimera Corp
   - Q = American Marc

2. Then comes a letter telling the kind of juice.
   - A means 60 Hertz (Standard Frequency).
   - B means 400 Hz (High Frequency).
   - C means 28-Volt DC (Direct Current).
   - D means 15-volt DC.

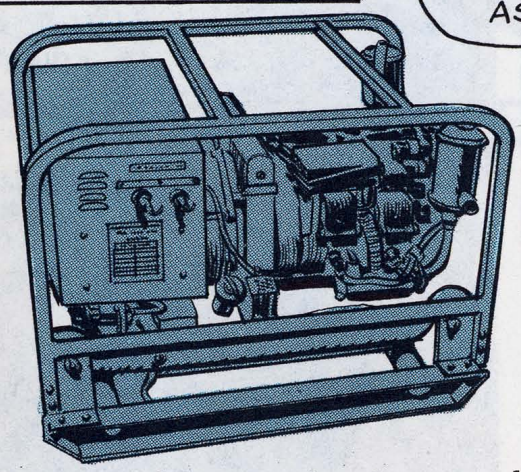
SERIAL NUMBER

BC6400300069

3. Numbers, the 3rd and 4th characters, show the year the model was first issued, like a 64 means the first of that series came out in 1964.

4. Characters 5, 6, and 7 show KW rating, like 003 is 3 KW and 010 is 10 KW.

5. Characters 8 thru 12 give unit sequence of manufacture, 00001 thru 99999, f'rinstance.



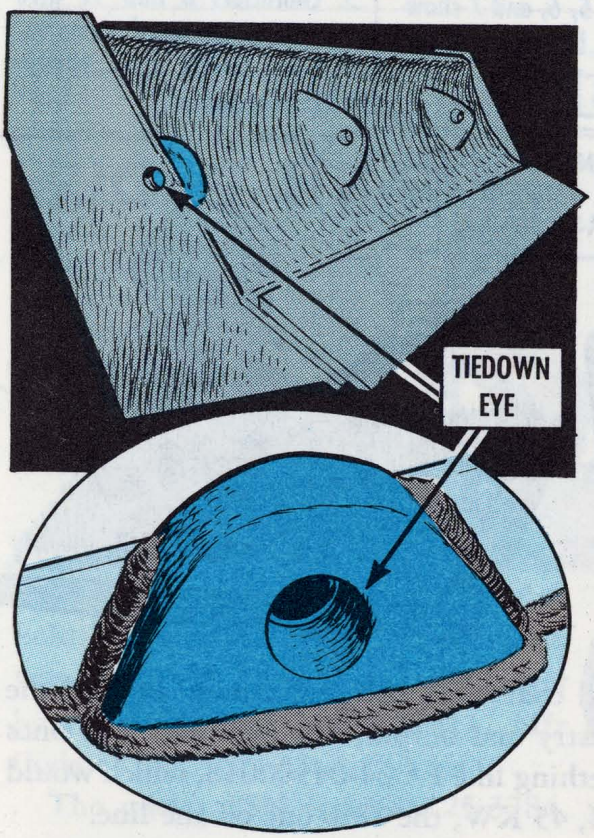
There may be some other letters and characters hanging around beyond the even dozen that spell out the set's ancestry and output, but mox nix. The ones you want to keep books by will be something like FA 64-04500018, which would mean Fermont made, 60 Hz, built 1964, 45 KW, the 18th one off the line.

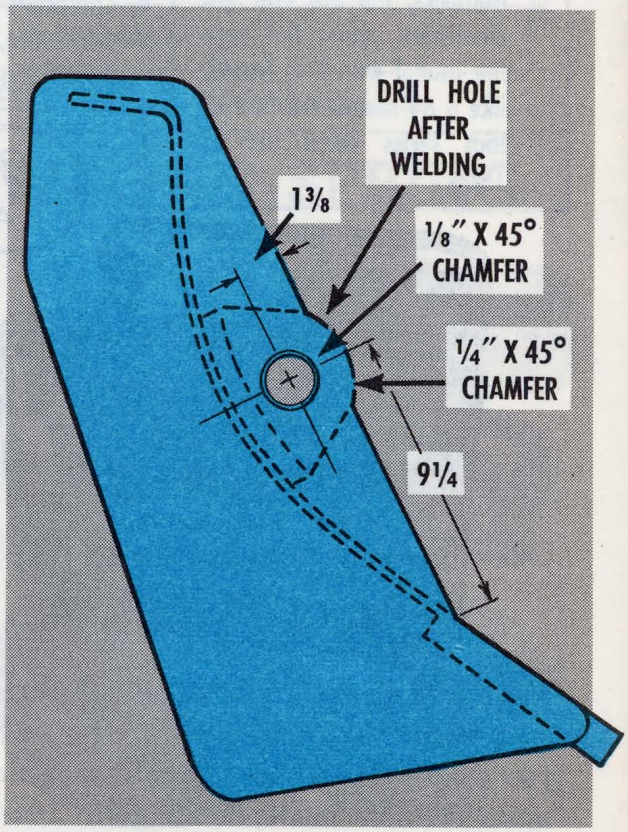
2380 CRANE HOOK TIEDOWN

Yes, Virginia, your utility blade on that 2380 Rough Terrain Crane should have a tiedown eye on the right end. It was a retrofit design change, but some of these heavy heavers didn't get the treatment.

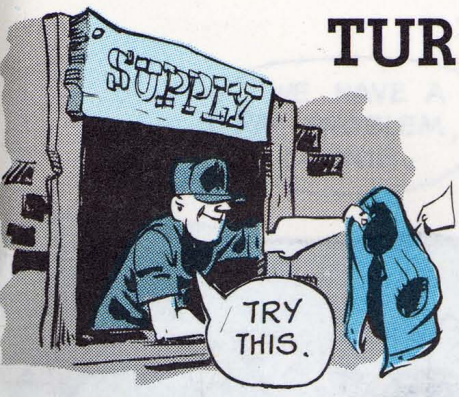
If your crane wasn't included in the roundup, you can do the changing yourself. You'll need the help of a good welder authorized to work on SC-3 stock. The authority is AR 750-35, since the official drawings call it a "field fix," it's a minor alteration.

You weld the plate on, then drill and chamfer. It'll be the greatest help imaginable for centering your boom on tiedown so it won't batter the left-hand side of its cradle.





TURN IN YOUR VEST



Dear Half Mast,

How do I keep the protective insides of my armor vest from wadding up into a ball? I store it flat, but when I grab it I find it has 3 distinct bumps in it — one in my back and one on each side. It not only leaves some areas exposed, but it's very uncomfortable.

SSG K. M. D.

Dear Sergeant K. M. D.,

In Southeast Asia area only those bunchy vests can be exchanged for vests that have stiffeners added to them.

Your support should be able to have the stiffeners added to those vests, or they should be able to exchange them for vests that have the stiffeners, which come under these FSN's listed in Fed Cat C8440/70-IL-A.

Small, FSN 8470-122-1299.

Medium, FSN 8470-122-1300.

Large, FSN 8470-122-1301.

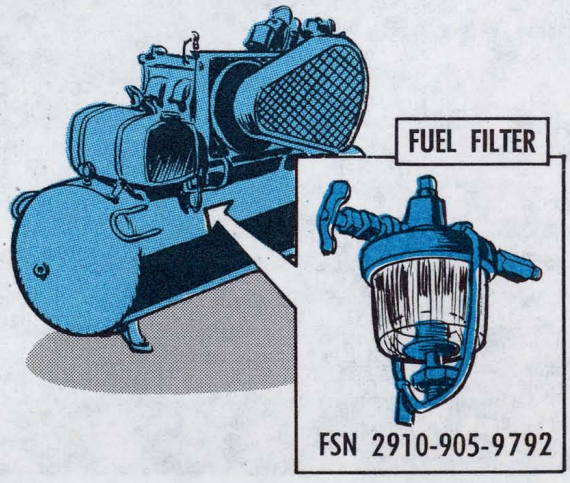
X-Large, FSN 8470-122-1302.

FUEL FILTER SWITCH

Bowl and strainer cleanouts on Champion OEG 458ENG3 15 CFM air compressors come easy if you just make one change in the fuel system.

Get a fuel filter, FSN 2910-905-9792, with a built-in shutoff valve, and you can forget about having to drain the fuel tank at every weekly fuel filter service.

The filter's the same that's installed on most Mil Std engines.



Connie's Mini Mini's

FSN's in AMDF

All FSN's appearing in PS Magazine are listed in the current AMDF (Army Master Data File) microfilm. The AMDF microfilms are in the hands of most DSU's. AR 700-1 says that the AMDF takes precedence over all other supply data.

Tell It Like It Is

When you gas turbine throttle jockeys write up a hot start on the DA Form 2408-13 give the EGT, number of seconds at that temperature and any other background info you may have. Maintenance types need **all** the info they can get to check out the engine.

Decon Calibration

A couple of gages used on the M9 truck-mounted decon and on the M12A1 skid-mounted decon need calibration. Vacuum gage, FSN 6685-809-4297, needs calibration every 90 days and pressure gage, FSN 6685-809-4298, needs calibration every 180 days. See TB 750-236.

Out in the Heat

How could one man be so lucky as to get a trailer air conditioning unit, FSN 4120-930-5700, and the 18,000-BTU electric unit inside, FSN 4120-926-9671, and still get no manuals, overpacked or otherwise? Send in a DA Form 17 asking for a TM 5-4120-333-12 on the whole unit, and a TM 5-4120-296-13 and -23P for the air conditioner alone.

Section IV Kaput

No section IV in your new TOE? No sweat. This cross reference of old/new line item numbers (LIN's) to FSN's is being dropped from TOE's, and lists there now won't be updated. But from now on you get this info from the adopted items list (SB 700-20) and from the old/new LIN cross reference (SB 700-22) as spelled out in DA Cir 310-86 (15 Jan 70).

5-Quarter Flash!

Forget it—no more free radiator repair for your M715 cargo truck (or other G890-Series 1¼-ton vehicle) unless the vehicle is still under warranty, under TB 9-2300-295-15 (Jun 67) and TB 9-2300-295-15/2 (Jan 68), this warranty ends at 6,000 miles or 2 years. (The article on page 65 of PS 211 is no good.)

Would You Stake Your Life right now on

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Bracket Buckle Fix

Scratch the FSN in para 4-12 of TM 3-4230-204-13 (Oct 69) for your M11 portable decon. You need FSN 8135-877-7502 for the tape that'll hold the mounting bracket buckle.

Not For Disposal

Don't let that AR 755-20 listed in your MWO's under Disposal of Discarded Parts throw you. That reference should read DOD 4160.21-M. That's the Defense Disposal Manual, and it formerly carried both the AR and DOD numbers. The AR number has been dropped.

Aircraft Poop

If you want to bone up on aircraft maintenance in general, eye a copy of TM 55-1500-204-25/1 (Apr 70). It has all the info formerly in TM 55-1500-311-25 and the TM 55-405-2 thru 8-series pubs.

Consolidation Can Hurt!

Consolidation of company and battery pin-point pub accounts into a higher headquarters account has led to the shortstopping of pubs. Hang onto your account so that operators and mechanics get the pubs they need to do their jobs.

DA 2406 Trim

Hold a sec on DA 2406. Airmen drop DA 2406 reports for ECC AF and AR, reporting aircraft readiness to DA on DA 1352 only. For other equipment, no entries are required in columns 11k thru 11t for DA 2406 copies to USAMCLDC (nor are "Q" cards needed for reports submitted by punch card). On the other hand, commands may collect the info that normally is entered in these columns for local use or for completing Unit Readiness reports (AR 220-1 or 135-8). The word went out in DA Msg 311618 (Mar 70).

Ether Can Can

Like to juggle a live mortar round so it won't go blam? Ether-starting an engine with any type of unauthorized starting aid could be like that. Any time you ether-start engineer equipment, be sure there's no stove, fire, electric sparks, or anybody smoking within a good dozen steps outdoors and double that under roof — or you could get blown thru the roof. And no etherizing tactical wheeled vehicles.

Would You Stake Your Life *right now* **on the Condition of Your Equipment?**

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the Condition of Your Equipment?

Keep Your Air Cleaner Clean

**Take care of it the way the TM says . . .
Remember — dirty air makes for unfair engine wear and tear . . .**